# 2.7. Depression is not a brain chemical imbalance illness



**No. 2**: In Section One of this course,

I included a presentation in which I illustrated the fact that for more than fifty years,

brain chemical imbalances have been repeatedly claimed to exist,

to have been scientifically established.

The main drivers of these claims have been the medical profession,

and many pharmaceutical companies

Not surprisingly, many other mental health professionals

have been persuaded into believing that brain chemical imbalances

are a known fact in depression, professionals such as psychologists,

psychotherapists, counsellors, social workers, occupational therapists,

psychiatric nurses, art therapists, social care workers, and others.

The process of persuasion has further spread, to the recipients of mental health care

and their families, peer mental health workers and volunteers,

mental health organisations, governments, and ultimately, the general public.

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**No. 3:** The truth is that,

No brain chemical imbalances have even been identified in depression.

So, what we have here is, a mass delusion;

The delusion being, that brain chemical imbalances are known to occur in depression,

And that these brain chemical imbalances most likely cause depression.

As we will see, neither of these widely held believes are correct.

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**No. 4:** Before any claims of chemical imbalances can rightfully be made,

An actual existing chemical imbalance needs to have been established

That is just common sense, good practice.

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**No. 5:** In this presentation,we will look briefly

at three known chemical imbalance illnesses,

where chemical imbalances have been identified,

diabetes, hypothyroidism and pituitary disease,

and compare them to depression.

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**No. 6**: Diabetes is a disease that occurs when a specific group of cells in the pancreas,

called the Islets of Langerhans, become diseased

and consequently fail to function as normal.

The organ involved in diabetes is the pancreas.

The pathology in diabetes involves abnormalities

in both pancreatic structure and function.

Specific abnormalities of cell structure that can be identified on microscopic examination

of a specific group of pancreatic cells known as the Islets of Langerhans.

During my medical training, I saw these cellular abnormalities with my own eyes,

actual slides of diseased pancreatic tissue in which these tissue changes were evident.

Since the function of these diseased cells is to produce insulin,

The production of insulin becomes reduced,

since these diseased cells cannot function as they normally would.

One of the main purposes of insulin is to regulate blood glucose levels.

Reduced insulin levels therefore result in increase blood glucose levels,

which is the characteristic chemical imbalance in diabetes.

You may remember, in the presentation on the three pillars of medical diagnoses

earlier in this Section of this course,

the three pillars of the process of establishing a medical diagnosis were

the history, though which the patient’s symptoms would be recorded;

physical examination, which reveals physical signs of specific illnesses;

and investigations.

These cornerstone principles of the process of medical diagnoses

apply equally to chemical imbalance illnesses.

Raised blood sugar produces the characteristic symptoms and signs of diabetes,

which alert the doctor to the possibility of diabetes.

The diagnosis is confirmed by investigations specific for diabetes,

sophisticated blood tests that reliably confirm the raised blood glucose levels.

The normal levels of blood glucose are known.

A normal blood glucose level is within the range from 3.0 to 5.5 mmols per litre.

The person’s blood glucose levels are compared to what the normal levels are,

and a decision regarding whether diabetes is present is made,

based on very clear diagnostic guidelines,

based on comparing the person’s blood sugar levels to a standardised

set of diagnostic criteria for diabetes.

Scientifically, a diagnosis of diabetes is rock solid.

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**No. 7:** Hypothyroidism is a medical condition that occurs

when the thyroid gland becomes diseased and fails to function adequately.

The organ involved in hypothyroidism is the thyroid gland in the neck.

The pathology in hypothyroidism involves abnormalities

in both thyroid structure and function.

Specific abnormalities of thyroid cell structure that can be identified

on microscopic examination.

The characteristic pathological feature of hypothyroidism

is diseased follicular cells,

a specific type of cell within the thyroid gland that produces thyroxine,

with is the hormone created by the thyroid gland.

During my medical training, I saw these cellular abnormalities with my own eyes,

actual slides of diseased thyroid tissue in which these tissue changes were evident.

When these cells are diseased, their ability to produce thyroid hormone is compromised,

levels of thyroid hormones in the body decrease,

and that is the chemical imbalance of hypothyroidism – a deficiency of thyroid hormone.

Low levels of thyroid hormone produces

the characteristic symptoms and signs of hypothyroidism,

which alert the doctor to the possibility of this diagnosis,

and prompts the doctor to carry out specific blood tests to check thyroid hormone levels.

The diagnosis is confirmed by investigations specific for hypothyoidism,

sophisticated blood tests that reliably identify the lowered thyroid hormone levels,

or in many cases, raised thyroid stimulating hormone levels.

This latter hormone is produced in the pituitary gland in the brain,

and its function is to regulate thyroid function.

When the thyroid gland becomes diseased,

and fails to produce sufficient levels of thyroid hormone,

levels of thyroid stimulating hormone levels increase

in an attempt to increase the production of thyroid hormone from the thyroid gland.

The normal levels of thyroid hormone and Thyroid Stimulating Hormone

in the blood are known.

Normal blood thyroid hormone levels are within a range from 4.6-12 ug/dl.

And normal Thyroid Stimulating Hormone levels are within a range from 0.4-4.5 µIU/mL.

Different labs may vary very slightly in their ranges.

The person’s blood levels are compared to what the normal levels are,

and a decision regarding whether hypothyroidism is present is made,

based on very clear diagnostic guidelines,

based on comparing the person’s blood levels to a standardised

set of diagnostic criteria for hypothyroidism.

Scientifically, a diagnosis of hypothyroidism is rock solid.

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**No. 8:** The third chemical imbalance condition I am going to consider is pituitary disease,

that results in pituitary failure.

The pituitary gland may be only the size of a pea, attached to the base of the brain,

but it performs many important functions,

including the production and secretion into the bloodstream

of several important hormones.

Pituitary diseases can cause a range of chemical imbalances,

which in turn cause a range of medical problems,

depending on the type of disease,

what chemicals are affected, and how.

Tumours of the pituitary gland are one form of pituitary disease.

Tumours of the pituitary gland can interfere with the structure and function

of this gland.

Some pituitary tumours spread into normal hormone producing pituitary cells,

causing chemical imbalances of insufficiency.

Insufficient pituitary hormones are produced for the body’s needs,

resulting in well recognised clinical illnesses that are scientifically known,

understood, measurable and in many cases, treatable.

It can also happen that pituitary tumours of cells that themselves produce

pituitary hormones, causing an out-of-control over-production of pituitary hormones.

I am going to consider one such situation now,

in which a pituitary tumour results in the overproduction of Growth Hormone.

Growth Hormone is produced by the pituitary gland

and secreted into the blood stream so it can be used by other tissues

in the normal process of growth.

In the particular scenario I am using to demonstrate chemical imbalances

resulting from diseases of the pituitary gland,

The pathology involves abnormalities in both pituitary structure and function.

Specific abnormalities of pituitary gland structure that can be identified

on microscopic examination.

The characteristic pathological features in this situation

involved diseased pituitary cells.

The medical term for these pathological abnormalities is “Pituitary Adenoma”,

reflecting both the type of pituitary cell affected, and the type of tumour.

That is the detailed level of medical understanding of this illness that pertains

In relation to this disease.

This is a microscopic slide of what this looks like under the microscope.

I include this image merely to illustrate the level of medical precision involved here.

Any pathology expert would immediately identify as a pituitary adenoma.

During my medical training, I saw these cellular abnormalities with my own eyes,

actual slides of diseased pituitary tissue in which these tissue changes were evident.

This abnormal and increased proliferation of Growth Hormone-producing cells

causes malfunction within this gland,

resulting in out-of-control raised levels of Growth Hormone,

 and this is the chemical imbalance that is characteristic of this disease.

This chemical imbalance produces characteristic symptoms and signs

of over-production of Growth Hormone.

If this disease occurs while growth is still occurring, in childhood or adolescence,

the person experiences the symptoms and exhibits the physical signs of Giantism,

the most obvious sign of which is abnormally increased height.

If this disease occurs in adulthood, when the normal growth period is over,

the person experiences the symptoms

and exhibits the distinct physical signs of Acromegaly,

the most obvious signs being thickness of body features,

as seen in the pair of hands at the top of this image,

compared to the second pair of hands in the picture.

Raised levels of Growth Hormone produces

characteristic symptoms and signs,

which alert the doctor to the possibility of this diagnosis,

and prompts the doctor to carry out specific blood tests

to check Growth Hormone levels.

The diagnosis is confirmed by investigations specific for Growth Hormone levels,

sophisticated blood tests that reliably identify the raised hormones levels.

The normal levels of Growth Hormone levels in the blood are known.

For example, normal growth hormone levels in health adult men should be

less than 226 pico moles per litre.

This disease is understood very well within the medical profession.

The diagnosis is rock solid scientifically.

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**No. 9:** The situation regarding all known chemical imbalances illnesses

is similar to that which I have described in relation to diabetes, hypothyroidism and

increased growth hormone production.

For all illnesses characterised by chemical imbalances,

the out-of-balance chemical has been identified scientifically.

The function of that chemical is known.

The normal range for that chemical is known,

from which clarity regarding abnormal levels can be created.

The pathology, the biological abnormalities

that are the cornerstone of any disease process, are known,

both the abnormalities in tissue structure that occur with that particular disease,

and the abnormalities in function that result from the structural abnormalities.

In every illness in which a chemical imbalance has been identified,

A reliable diagnostic test for the levels is widely available,

To be used whenever that particular diagnosis is being seriously considered.

Laboratory confirmation of abnormal levels of the chemical is always required as

an essential component in establishing a diagnosis.

Treatment of a chemical imbalance illness is always linked to

and guided by ongoing laboratory investigations.

In diseases in which a deficiency of a chemical is known to be central to the condition,

Treatment generally involves treating like with like.

Treatment routinely involves replacing the deficient chemical with that exact chemical.

For many people with diabetes, insulin, the chemical in which they are deficient,

is the mainstay of treatment.

People diagnosed with hypothyroidism receive daily thyroid hormone replacement.

Growth Hormone deficiency is treated with Growth Hormone replacement,

B12 deficiency with B12 replacement, and so on.

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**No. 10:** How does depression compare with the long-established features

of known chemical imbalance diseases that I have set out in this presentation?

Doctors say that the organ in which

the claimed chemical imbalances in depression occur is the brain.

Regarding biological pathological findings of brain structure and function in depression,

None have been reliably scientifically identified.

No brain chemical imbalance has ever been reliably identified scientifically

in depression - ever.

As we have seen in another presentation in this section of the course, presentation 2.5,

the process of medical diagnoses depends on three pillars of diagnoses,

and this includes chemical imbalance illnesses.

The first pillar, known within medicine as the History,

refers to the person’s experiences and behaviours,

within which symptoms of illness emerge.

In relation to depression, doctors hear about the person’s experiences and behaviours,

which as we will see in section three of this course,

are primarily emotional and psychological experiences and behaviours,

expressions of woundedness, distress, defense mechanisms,

trauma, and choice-making,

and reclassify these as symptoms.

This is a questionable practice.

The second pillar of diagnosis, physical examination, generally reveals no physical

Signs that can be said to be specific for depression.

The third pillar, investigations, never plays any part in the diagnosis of depression,

other than in the ruling out of known physical illnesses,

because no diagnostic biological laboratory investigations exist for depression.

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**No. 11:** Two slides ago, I set out some key characteristics

of chemical imbalance illnesses.

How does depression fare in regard to these characteristics?

Not very well, in fact.

No imbalanced brain chemical has been identified in depression.

Since no imbalanced brain chemical has been identified to begin with,

the function of the brain chemical cannot truthfully be claimed to be known,

nor can any such drug’s normal range, or abnormal range.

No biological pathology has been scientifically identified in depression,

neither abnormalities in brain structure or function.

Not surprisingly, no test or investigation exists that is diagnostic for depression.

Since no tests to confirm a diagnosis of depression exist,

laboratory confirmation of a diagnosis of depression never happens.

The treatment of depression cannot ever be linked to,

or guided by ongoing lab tests that do not exist.

Since no brain chemical imbalance or deficiency

has ever been reliably identified in depression,

it cannot be truthfully claimed

that in depression a deficiency is being treated by replacing the deficient brain chemical.

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**No. 12:** In my 2015 book, *Depression Delusion Volume One:*

*The Myth of the Brain Chemical Imbalance,*

I set out in some detail the reality that there never has been

any reliable scientific evidence of any brain chemical imbalance in depression.

In this book, I included many scientific commentaries

that clearly expressed the palpable lack of scientific evidence

of brain chemical imbalances in depression.

For the purposes of this course,

I include some examples of this, spread over a 30-year period,

to illustrate the fact that scientific questioning of the notion

of brain chemical imbalance in depression has actually been ongoing for decades.

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**No. 13:** Published in 1990, over 20 years after the chemical imbalance notion

began to be enthusiastically promoted as a supposedly known fact,

and two years *after* the launch of Prozac,

whose launch was marked with enthusiastic claims

of known brain chemical imbalances in depression,

the authors of the highly respected medical textbook,

*The Pharmaceutical Basis of Therapeutics,* wrote that,

data for the neurotransmitter hypothesis of mood disorders such as depression:

“Are inconclusive and have not been consistently useful

either diagnostically or therapeutically”.

(A. Gilman, T. Rail, A. Nies, and P. Taylor, P (eds.), *Goodman and Gilman’s The Pharmacological Basics of Therapeutics,* 8th edition, New York: Pergamon Press, 1990,

p. 1811.)

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**No. 14:** *Biochemistry: Molecules, Cells and the Body*

is a comprehensive medical textbook of 592 pages published in 1995,

seven years after the launch of Prozac,

at a time when many doctors were speaking in public and to their patients that

the biochemistry of brain chemical imbalances was as well established

as that of diabetes.

This book contains no index entries for depression,

which is not discussed anywhere in the book.

There are no index entries for SSRIs or antidepressants.

There is one index entry for serotonin, which amounts to four lines in the text.

This brief passage contains no mention of depression, the brain,

or brain serotonin balance or imbalance.

However, three pages in this book are devoted to the biochemistry of diabetes.

There are four index entries for diabetes, 19 for glucose and ten for insulin.

(Jocelyn Dow, Gordon Lindsey & Jim Morrison, *Biochemistry: Molecules, Cells and the Body,* Harrow: Addison-Wesley, 1995.)

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**No. 15:** *Mark’s Basic Medical Biochemistry: A Clinical Approach*

is an extensive 2005 medical biochemistry textbook of 977 pages.

The index contains five entries for diabetes,

nineteen for blood glucose and 42 for insulin—

often quoted by doctors as the diabetes equivalent of neurotransmitters

such as serotonin.

The index does not contain a single entry for depression.

There is just one index entry for serotonin.

This one entry has nothing to do with depression.

It concerns the synthesis of serotonin in the body,

which amounts to just two brief paragraphs.

More than 90% of serotonin in the human body is located within the digestive system.

This book contains no reference to any neurotransmitter abnormalities

or any illnesses that might be related to brain serotonin or other neurotransmitters.

(Allan D. Marks, Michael Lieberman & Coleen Smith, *Mark’s Basic Medical* *Biochemistry: A Clinical Approach,* 2nd edition, Lippincott, Baltimore: Williams & Wilkins, 2005.)

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**No. 16**: The 2012 medical textbook *Histology and Cell Biology:*

*An Introduction to Pathology* contains 688 pages,

 and includes a detailed description of cell and tissue biology,

pathology, physiology, biochemistry and cell signaling and associated pathways.

This book contains a substantial 32-page chapter on brain and tissue

in which a wide range of brain diseases are dealt with in detail

including multiple sclerosis, Guillian Barre syndrome and many others.

There is no reference to depression in this chapter.

The book also contains a 22-page chapter on the neuroendocrine system,

that is, the parts of the brain and nervous system that produce chemical hormones.

in which there is not a single reference to depression.

There is no mention of depression in the book’s index.

In contrast, there are three references to diabetes and 12 references to insulin in the index.

Serotonin gets one mention in the book as a neurotransmitter.

There are no references to neurotransmitter imbalances

or abnormalities in the book or to structural or functional changes

relating to neurotransmitters.

(Abraham L. Kierszenbaum and Laura L. Tres, *Histology and Cell Biology: An Introduction to Pathology*, 3rd edition, Philadelphia: Elsevier Saunders, 2012.)

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**No. 17:** The lack of evidence for the biochemical brain abnormality notion in depression

surfaces in many other medical textbooks.

*Principles of Anatomy and Physiology* is a comprehensive 2005 medical textbook

of over 1,200 pages.

The anatomy and physiology of diabetes are discussed in some detail in this book.

The only reference to depression in the text is as

“a downward movement of a part of the body”.

This book contains just one index entry for serotonin.

This entry refers to four lines in the “Neurotransmitters” section of the book,

in which there is no mention of serotonin deficiency or abnormality, or depression.

(Gerard J. Tortora & Bryan Derrickson, *Principles of Anatomy and Physiology*, 11th edition, New Jersey: John Wiley & Sons, Inc, 2006, p. 429.)

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**No. 18:** A long list of mental health professionals, including many psychiatrists,

have done their best to inform the public of the truth

in relation to brain chemical imbalances and psychiatric diagnoses including depression.

As long ago as 1978, British-based psychiatrist Dr. L. Ratna wrote;

Although it is stated by practically all the (psychiatric) textbooks

that the aged are more prone to depression of an endogenous nature

(that is, arising from within the person rather than in response to external triggers,

generally assumed to be biologically caused),

we believe that the unhappiness which is misdiagnosed

 and treated as an endogenous illness is a legitimate response

to the plight that many of the aged find themselves in . . .

The so-called depression therefore, is not primarily due to a biochemical upset

but an understandable reaction to the alienation, rejection, isolation and social stress

that the aged are subject to. [[1]](#endnote-1)

(L. Ratna, “Crisis Intervention in Psychogeriatrics: A Two-Year Follow-up Study”, in L. Ratna, L., {ed.}, *The Practice of Psychiatric Crisis Intervention*, 1978, Hertfordshire: League of Friends, Napsbury Hospital, UK.)

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**No. 19:** According to a 1990 textbook which was described

as “a ‘bible’ . . . a most valued volume”, in the highly respected *New England Journal of Medicine* (Solomon H. Snyder “Book Review—*Goodman and Gilman’s The Pharmacological Basis of Therapeutics*”, *New England Journal of Medicine,* 28 February 1991; 324:636-637, [http://www.nejm.org/doi/full/ 10.1056/NEJM199102283240919](http://www.nejm.org/doi/full/%2010.1056/NEJM199102283240919), accessed 18 May 2014.), the data for the neurotransmitter hypothesis of mood disorders such as depression:

“Are inconclusive and have not been consistently useful

either diagnostically or therapeutically”.

This book was published two years *after* the launch of Prozac, that is,

two years after the highly publicised launch of a new generation of substances,

for which correction of established brain chemical imbalances was a main

and much-promoted selling point.

This book was published in the same year as Prozac fever began to grip the world,

(A. Gilman, T. Rail, A. Nies, and P. Taylor, P (eds.), *Goodman and Gilman’s The Pharmacological Basics of Therapeutics,* 8th edition, New York: Pergamon Press, 1990, p. 1811.)

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**No. 20:** as evidenced by the starring of a Prozac capsule

on the cover of *Newsweek* magazine on the 26th March 1990, with the heading,

“Prozac: A Breakthrough Drug for Depression”.

The major international reaction to Prozac was based primarily on two factors:

Many people who took Prozac reported feeling energised and markedly uplifted.

This phenomenon was famously referred to by American psychiatrist Peter Kramer

in his highly influential 1992 book *Listening to Prozac* as feeling “better than well”,

which when you think about it, is clearly not a natural state,

and has since been linked with the stimulant effect of this and similar substances.

A second and major reason for the explosive growth

in the popularity of Prozac and similar drugs was the much-repeated explanation

used to legitimise the use of these substances –

that they worked by correcting an underlying brain chemical imbalance

that is known is present in depression.

This claim was widely made by drug companies, but much more importantly,

also by many psychiatrists, GPs/family physicians,

doctors whom the public trusted and believed.

All this in spite of the fact that no such brain chemical imbalances

had even been identified, never mind demonstrated to become balanced

in response to Prozac and similar drugs.

This was a great victory, not for science, but for propaganda,

and for those who benefitted from such propaganda.

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**No. 21:** Governments, health authorities, the medical profession and the drug industry

knew or should have known for decades that there was no identified correlation

between brain chemical deficiency and depression.

The U.S. Congress Office of Technology assembled a panel of experts

in the field in the early 1990s.

In 1992 these experts reported to the Congress Office of Technology,

in the form of a publication entitled *The Biology of Mental Disorders*.

What the experts wrote makes it clear that the propaganda that went viral globally

about Prozac and similar substances, that legitimised the explosion

in both the diagnosis of depression and the prescription of antidepressants

was in fact gross misinformation. According to these experts,

“Prominent hypotheses concerning depression have focused on altered function

of the group of neurotransmitters called monoamines,

particularly norepinephrine (also known as noradrenaline) and serotonin . . . studies . . .

have found no specific evidence of an abnormality to date.

Currently, no clear evidence links abnormal serotonin receptor activity in the brain

to depression . . . the data currently available do not provide consistent evidence

either for altered neurotransmitter levels or for disruption of normal receptor activity.”

(“The Biology of Mental Disorders”, U.S. Government Printing Office, 1992.)

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**No. 22:** In his 1993 book *Toxic Psychiatry*, American psychiatrist Peter Breggin wrote:

“Scientific reviews of the biochemistry of depression have failed to identify

a consistent biochemical basis. The most recent psychiatric textbooks

review the biochemistry of depression, sometimes in detail,

as if a great deal must be known about the subject;

but they end up admitting that the theories are conflicting and remain speculative”.

(Peter Breggin, *Toxic Psychiatry,* London: HarperCollins, 1993, pps. 173-5.)

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**No. 23:** Colin Ross M.D., Associate Professor of Psychiatry

at Southwest Medical Center, Dallas,

wrote in his 1995 book *Pseudoscience in Biological Psychiatry*:

“There is no scientific evidence whatsoever that clinical depression is due

to any kind of biological deficit state”.

(Colin Ross, *Pseudoscience in Biological Psychiatry,* New York: John Wiley & Sons, 1995, p. 111.)

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**No. 24:** At a 1997 Harvard Medical School conference,

Dr. Andrew Nierenberg, Harvard professor and then director

of the depression research programme at the Massachusetts General Hospital,

discussed the disease model of depression. He then admitted:

“The dark side of all this is that we have many elegant models

“but the real fact is that when it comes to the exact mechanisms

 by which these things work, we don’t have a clue”.

(A. Nierenberg, “Antidepressants: Current Issues and New Drugs”, Harvard Medical School/ Massachussetts General Hospital Conference of Psychopharmacy, 17-19 October 1997.)

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**No. 25**: Professor Emeritus of Psychology and Neuroscience

at the University of Michigan, Elliot Valenstein,

wrote in his 1998 book *Blaming the Brain*:

“It may surprise you to learn that there is no convincing evidence

that most mental patients have any chemical imbalance.

Yet many physicians tell their patients they are suffering from a chemical imbalance

despite the reality that there are no tests available for assessing the chemical status

of a living person’s brain . . .

The truth is that we still do not know what causes any mental disorder

Yet, despite this, the theory that mental disorders arise from biochemical imbalance

is widely accepted”.

(Elliot S. Valenstein, *Blaming the Brain: The Truth About Drugs and Mental Health*, New York: The Free Press, 1998.)

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**No. 26:** Thomas J. Moore, Senior Fellow in Health Policy

at George Washington University Medical Centre,

wrote in his 1998 *Prescriptions for Disaster;*

“The chemical imbalance theory has not been established by scientific evidence”.

(Thomas Moore*, Prescription for Disaster: The Hidden Dangers in your Medicine Cabinet,* Dell, 1998, http: //www.bible.ca/psychiatry/psychiatry-mental-illness-myths-chemical-imbalances.htm, accessed 27 February 2014.)

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**No. 27:** Then Clinical Associate Director of Psychiatry and Behavioural Sciences

at the Stanford University Hospital of Medicine,

psychiatrist David Burns wrote in his 1999 book The Feeling Good Handbook:

“Some psychiatrists appear to confuse theory with fact.

They tell depressed patients that they have chemical depressions

that must be treated with antidepressants.

I would prefer that psychiatrists not do this,

because it creates an impression of certainty in the patient’s mind

that is not justified by current scientific evidence.”

(David D. Burns, *The Feeling Good Handbook,* New York: Plume, 1999.)

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**No. 28:** In a 2000 textbook used to teach medical students

about psychiatric medications, psychiatrist Professor Stephen M. Stahl wrote:

“So far, there is no clear and convincing evidence

that monoamine deficiency accounts for depression;

that is, there is no “real” monoamine deficit”.

Monoamines is the chemical name for the group of substances that are widely claimed

to be deficient in depression. And here we have a highly respected and experienced

psychiatrist stating unequivocally that no deficit of these chemicals

has been scientifically identified to exist.

(Stephen M., Stahl, *Essential Psychopharmacology: Neuroscientific Basis and Practical Applications,* Cambridge: Cambridge University Press, 2000, p. 601.)

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**No. 29:** Psychiatrist Professor Steven Hyman,

then Director of the U.S. National Institute of Mental Health,

wrote about the chemical imbalance notion in a 2000 World Health Organization bulletin:

He wrote,

“Too simple was the concept . . . that abnormal levels of one or more neurotransmitters

would satisfactorily explain the pathogenesis of depression or schizophrenia”.

(Stephen E. Hyman, Bulletin of the World Health Organization, 2000, 78 (4), [http://www.who.int/bulletin/archives/78(4)455.pdf](http://www.who.int/bulletin/archives/78%284%29455.pdf), accessed 01st May 2016).

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**No. 30:** American psychiatrist Joseph Glenmullen, then Clinical Instructor of Psychiatry

at Harvard Medical School, wrote in his 2001 book *Prozac Backlash* that;

“A serotonin deficiency for depression has not been found . . .

there has been no shortage of alleged biochemical explanations

for psychiatric conditions . . . not one has been proven. Quite the contrary.

In every instance where such an imbalance was thought to have been found,

it was later proven false . . .

Still, patients are often given the impression that a definitive serotonin deficiency

in depression is firmly established”.

(Joseph Glenmullen, *Prozac Backlash: Overcoming the Dangers of Prozac, Zoloft, Paxil and Other Antidepressants with Safe, Effective Alternatives,* Simon & Shuster, 2001.)

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**No. 31:** In his 2001 book *The Rape of the Soul: How the Chemical Imbalance Model*

*of* *Psychiatry has Failed its Patients*, Ty C. Colbert Ph.D., clinical psychologist and author wrote:

“Biopsychiatrists (that is, psychiatrists who favour a biological approach, which is the vast majority of psychiatrists at this time) have created the myth

that psychiatric ‘wonder’ drugs correct chemical imbalances.

Yet there is no basis for this model

because no chemical imbalance has even been proven to be the basis

of a mental illness”.

(Ty Colbert, T*he Rape of the Soul: How the Chemical Imbalance Model of Psychiatry has Failed its Patients,* California: Kevco Publishing, 2001, p. 79.) …………………………………………………………………………………………………

**No. 32:** In his foreword to the 2001 edition of my best-selling book *Beyond Prozac,*

Irish psychologist and author Dr. Tony Humphreys wrote:

“In spite of 200 years of research, no enduring evidence has emerged to substantiate

the medical model of psycho-social distress.

Indeed, there is no evidence that conditions such as

bipolar depression, schizophrenia, personality disorder, obsessive-compulsive disorder

and endogenous depression have any genetic, biochemical,

biological or hereditary basis.”

(Tony Humphreys, in foreword to *Beyond Prozac: Healing Mental Suffering Without Drugs*, Dublin: Marino Books, 2001, p. 11.)

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**No. 33:** Dr. Thomas Szasz, then Professor Emeritus of Psychiatry

at the New York University Medical School, Syracuse, wrote in 2002:

“There is no blood or other biological test

to ascertain the presence or absence of mental illness,

as there is for most bodily diseases.

If such a test were developed . . .

then the condition would cease to be a mental illness

and would be classified, instead, as a symptom of bodily disease.”

(Thomas Szasz, in “Psychiatric Hoax: The Subversion of Medicine”, Citizen’s Commission on Human Rights, 2002.)

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**No. 34:** In 2003, Ireland’s drug regulatory body, the Irish Medicines Board,

 banned drug company GlaxoSmithKline from stating on its patient information leaflet

that Seroxat “works by bringing serotonin levels back to normal”.

 Irish Medicines Board officials concluded that:

“There is no scientific investigation to measure what are normal serotonin levels

in the human brain receptors. As such, claiming that a particular medicinal product works

by bringing serotonin levels back to normal is not accurate.

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**No. 35:** This decision by the Irish Medicines Board

occurred about 9 months after I made a formal complaint to this drug regulatory body

regarding the wording on the Seroxat patient information leaflet.

Having considered my complaint, in a letter to me in November 2002,

the Irish Medicines Board informed me that:

“The Irish Medicines Board has been reviewing this matter with its experts for some time

 and is in agreement that the statement that SSRIs

‘work by bringing the levels of serotonin back to normal’

is not consistent with the literature.

The company has been asked to review the patient information leaflet accordingly.

Thank you for your interest in this matter”.

(<http://www.cmaj.ca/content/174/6/754.2>, accessed 26 February 2014.)

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**No. 36:** American Psychologist and author Bruce Levine, Ph.D. wrote the following

in his 2003 book, *Commonsense Rebellion: Taking Back your Life from Drugs, Shrinks,*

*Corporations, and a World Gone Crazy:*

“No biochemical, neurological, or genetic markers have been found

for Attention Deficit Disorder, Oppositional Defiant Disorder, Depression, Schizophrenia,

Anxiety, compulsive alcohol and drug abuse, overeating, gambling

or any other so-called mental illness, disease, or disorder.”

( Bruce Levine, *Commonsense Rebellion: Taking Back your Life from Drugs, Shrinks, Corporations, and a World Gone Crazy,* Bloomsbury Academic 2003. )

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**No. 37:** Stanford psychiatrist David Burns again, in 2003:

“I spent the first several years of my career doing full-time brain research

on brain serotonin metabolism,

but I never saw any convincing evidence that any psychiatric disorder,

including depression, results from a deficiency of brain serotonin.

In fact, we cannot measure brain serotonin levels in living human beings

so there is no way to test this theory.”

 He added that, “Some neuroscientists would question whether

this theory is even viable, since the brain does not function in this way,

as a hydraulic system.

(Psychiatrist David Burns, when asked about the scientific status of the serotonin theory in 2003, in J. R. Lacasse and T. Gomory, “Is graduate social work education promoting a critical approach to mental health practice?” *J Soc Work Educ* 2003, 39: 383–408.)

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**No. 38:** In a 2004 article, American professor of neuroanatomy Jonathan Leo wrote:

“Never has a theory with so little scientific evidence been so well accepted

by the American public”.

Leo made the following suggestion to people told by doctors

that they had a chemical imbalance:

“If a psychiatrist says you have a shortage of a chemical,

ask for a blood test and watch the psychiatrist’s reaction.

The number of people who believe that scientists have proven that depressed people

have a low serotonin is a glorious testament to the power of marketing.”

(Jonathan Leo, “The Biology of Mental Illness” *Society,* July/August 2004, Volume 41, Issue 5, pp. 45-53, [http://link.springer.com/article/10.1007%2FBF02688217#page-1](http://link.springer.com/article/10.1007/BF02688217#page-1), accessed 19 August 2014.)

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**No. 39:** New York psychiatrist Ron Leifer has suggested a similar approach:

“There’s no biological imbalance. When people come to me and they say,

‘I have a chemical imbalance’, I say ‘Show me your lab tests’. There are no lab tests.

So what’s the chemical imbalance? There is no such thing as a chemical imbalance,

and any psychiatrist that you talk to, if you ask them that question,

they’ll all admit it in private but they won’t admit it in public. It’s a scandal.”

(Ron Leifer, [http://www.anxietycentre.com/downloads/Chemical-Imbalance-Theory-is-False. pdf](http://www.anxietycentre.com/downloads/Chemical-Imbalance-Theory-is-False.%20pdf), accessed 28 February 2014.)

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**No. 40:** Dr. Darshak Sanghavi, clinical fellow at Harvard Medical School, said in 2004:

Despite pseudoscientific terms like “chemical imbalance”,

nobody really knows what causes mental illness.

There’s no blood test or brain scan for major depression.

(Darshak Sanghavi, “Health Care System leaves Mentally Ill Children Behind”, *Boston Globe,* 27 April 2004.)

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**No. 41:** Psychiatrist Kenneth Kendler, then co-editor-in-chief of Psychological Medicine,

wrote in a review article in 2005:

“We have hunted for big simple neurochemical explanations

for psychiatric disorders and have not found them”.

(Kenneth S. Kendler, M.D., “Towards a Philosophical Structure for Psychiatry”, *American Journal of Psychiatry,* 01 March 2005, 162:433-440. Doi:1176/appi.ajp.162.3.433, accessed 18 February 2014.)

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**No. 42:** Psychiatrist Joanna Moncrieff, senior lecturer in psychiatry

at University College London, said in a 2005 interview that:

“The pharmaceutical industry has managed to convey a misleading picture.

I speak to quite a few journalists, and they are quite shocked to hear

that the link between serotonin and depression is very tenuous

and the research conflicting and not convincing.

The psychiatric profession and academic researchers are probably also partly to blame

 for glossing over the weakness of the research”.

(Joanna Moncrieff, quoted in “Advertisements for SSRIs May Be Misleading”, by Laurie Barclay, MD, *Medscape,* 08 November 2005, <http://www.medscape.com/viewarticle/516262>, accessed 02 June 2014.)

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**No. 43:** Also in a 2005 article, professor of neuroanatomy Jonathan Leo

and social work professor Jeffrey Lacasse wrote:

“During the past fifty years, a steady stream of researchers

have attempted to identify direct evidence for the monoamine theory of depression,

of which the serotonin hypothesis is one aspect.

They have consistently failed to do so.

Indeed, as many scientific researchers have demonstrated,

most of the evidence they found either directly contradicted

or did not support this theory.

In fact, there is no scientifically established ideal ‘chemical balance’ of serotonin,

let alone an identifiable pathological imbalance”.

(J.R. Lacasse & J. Leo, “Serotonin and depression: A Disconnect between the Advertisements and the Scientific Literature”, PLoS Med: 2(12) e392, 08 November 2005, accessed 18 February 2014.)

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**No. 44:** Psychiatrist and psychopharmacologist Professor David Healy

of the University of Wales is former secretary of the British Association for Psychopharmacology and a historian of psychiatric drugs including antidepressants.

In his 2006 book *Let Them Eat Prozac: The Unhealthy Relationship between*

*the Pharmaceutical Industry and Depression,* Professor Healy wrote:

“It is now widely assumed that our serotonin levels fall when we feel low . . .

but there is no evidence for any of this, nor has there ever been . . .

No abnormality of serotonin in depression has ever been demonstrated.”

(David Healy, *Let them Eat Prozac: The Unhealthy Relationship between the Pharmaceutical Industry and Depression,* New York: New York University Press, 2006.)

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**No. 45:** Psychiatrist David Burns again, this time, in his 2006 book,

 *When Panic Attacks: The New Drug-Free Anxiety Therapy that can Change your Life:*

“To this day, I am not aware of any studies

that have validated the chemical imbalance theory.

If I tell you that your depression or your panic attacks

result from a chemical imbalance in the brain,

then I’m telling you something that cannot be proven,

because there is no test for a chemical imbalance in the human brain.”

(David Burns, *When Panic Attacks: The New Drug-Free Anxiety Therapy that can Change your Life,* Harmony, 2006.)

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**No. 46:** American psychiatrist Peter Breggin again, this time in 2007:

“Despite more than two hundred years of intensive research,

no commonly diagnosed psychiatric disorders have been proven to be

either genetic or biological in origin, including major depression.

At present there are no known biochemical imbalances

in the brain of typical psychiatric patients.”

(Peter Breggin, Centre for the Study of Psychiatry and Psychology, [http://www.alex-sk.de/mirror /braindis.html](http://www.alex-sk.de/mirror%20/braindis.html), 2007, accessed 27 November 2013.)

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**No. 47:** Commenting on experiences of his patients that clearly did not fit

into the narrow medical model, Irish psychiatrist Professor Ivor Browne wrote

in his 2008 book *Music and Madness*:

“It was experiences like this which taught me

how bogus is the concept of ‘clinical depression’.

The idea that there is a chemically mediated form of depression

which is an ‘illness’, quite separate from the sadness and depression

which are part of the slings and arrows of ordinary life, is manifest nonsense.”

(Ivor Browne, Music and Madness, Cork: Cork University Press: Cork, 2008, p. 121.)

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psychologist, researcher and author Professor Irving Kirsch wrote:

“During the last 50 years, researchers have tried to find more direct evidence

for the monoamine theory of depression, (that is, the theory that depression is caused

by and characterised by brain chemical imbalances),

but by and large they have failed. Instead of finding confirmation,

much of the evidence they have found is contradictory or runs counter to the theory”.

(Irving Kirsch, *The Emperor’s New Drugs: Exploding the Antidepressant Myth*, London; Random House, 2009, pps.90-93.)

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**No. 49:** In a 2009 New York Review of Books article,

American physician and author Dr. Marcia Angell,

former editor-in-chief of the[*New England Journal of Medicine*](https://en.wikipedia.org/wiki/New_England_Journal_of_Medicine) wrote,

“The theory that psychiatric conditions stem from a biochemical imbalance

is used as justification for their widespread use,

even though the theory has yet to be proved”.

(Marcia Angell, “Drug Companies and Doctors: A Story of Corruption”, *New York Review of Books*, 15 January 2009.)

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Associate Professor of Psychology at the University of South Florida,

wrote in a 2010 Psychology Today article that:

“As a scientific venture, the theory that low serotonin causes depression

appears to be on the verge of collapse.”

(Jonathan Rottenberg, “The Serotonin Theory of Depression is Collapsing”, *Psychology Today,* 23 July 2010, accessed 03 January 2014.)

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**No. 51**: Australian psychiatrist and author Niall McLaren stated in a 2010 recording:

“People are being told, ‘You have a chemical imbalance in the brain

which is genetically determined, and you’ve got it for life.

And there’s nothing you can do about it”.

McLaren described this as part of the psychiatric

“catastrophe that needs to be exposed”.

(Niall McLaren, <http://biopsychiatry.ca/category/radio-show/dr-niall-mclaren/>, 9 August 2010, accessed 11 May 2014.)

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**No. 52:** Professor of Social work and psychiatry at New York University,

 Jerome Wakefield said in a 2012 interview that,

“We’ve thrown tens of billions of dollars

into trying to identify biomarkers and biological substrates for mental disorders . . .

The fact is we’ve gotten very little out of all that.”

(Kirsten Weir, “The Roots of Mental Illness”, American Psychological Association, June 2012, Vol. 43, No. 6, <http://www.apa.org/monitor/2012/06/roots.aspx>, accessed 26 March 2014.)

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**No. 53:** Psychiatrist Vivek Datta studied medicine and psychology

at the University of London.

He was a Research Fellow in Psychological Medicine at the Institute of Psychiatry

at the Maudsley in London.

He obtained a Masters in Public Health from Harvard University.

In an article titled “Chemical Imbalances and Other Black Unicorns”,

published on the Mad in America website on 25 June 2012, Datta wrote:

“It is a story where medicine is the hero, and bad biochemistry the villain.

 It is a story with no basis in reality”.

(Vivek Datta, “Chemical Imbalances and Other Black Unicorns”, Mad in America website, 25 June 2012, [http://www.madinamerica.com/ 2012/06/chemical-imbalances-and-other-black-unicorns /](http://www.madinamerica.com/%202012/06/chemical-imbalances-and-other-black-unicorns%20/), accessed 27 February 2014.)

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**No. 54:** Dr. Steven Reidbord is an American psychiatrist

with a full-time office practice in San Francisco.

His internet blog is titled “Reidbord’s Reflections”.

On 29 April 2012 he published an article on his blog entitled,

“Chemical imbalance—Sloppy thinking in psychiatry 1”.

In this blog, Dr. Reidbord wrote:

“There’s a lot of sloppy thinking in my field. This troubles me . . .

‘Chemical imbalance’ is a phrase used by psychiatrists and laypeople alike.

When a mental problem seems to arise from within instead of without,

it is said to be due to a chemical imbalance.

In truth, however,

no chemical imbalance, nor any structural abnormality in the brain,

has ever been found to account for anything we currently consider

a psychiatric disorder”.

(Steven Reidbord, “Chemical imbalance—Sloppy thinking in psychiatry 1”, in “Reidbord’s Reflections”, 29 April 2012, <http://blog.stevenreidbordmd.com/?p=561>, accessed 25 May 2014.)

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**No. 55:** In his 2013 book *How Everyone Became Depressed,*

Canadian psychiatrist and historian of psychiatry Edward Shorter wrote:

“There is no biological marker for depression, major or not . . .

Nor has any psychiatric illness been convincingly attributed

to a shortage of any particular transmitter. In other words, to a chemical imbalance.”

(Edward Shorter, *How Everyone Became Depressed,* Oxford: Oxford University Press, 2013, pps. ix and 154.)

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**No. 56:** In 2013, American psychiatrist Dr. Steven Hyman,

former Director of the National Institute of Mental Health in America, wrote an article

in which he discussed the progressive withdrawal

and reduction of involvement in psychiatric funding and research

by major pharmaceutical companies, a very significant development for several reasons.

In this article, Dr. Steven Hyman listed some of the reasons for this change,

and this was one of these reasons:

 “The molecular and cellular underpinnings of psychiatric disorders remain unknown”.

In other words, in spite of over 50 years intense research,

biological abnormalities such as brain chemical imbalances have not been found.

Drug companies have nothing definite to work with,

no biological abnormalities against which they can test their ideas and products.

Consequently, many drug companies have decided to turn their attention

to areas of health that offer more promise in terms of known abnormalities

with which to work.

It is somewhat ironic that this action has been taken in recent years by drug companies,

Many of whom have, along with many psychiatrists and GPs,

over the past fifty years been proclaiming that depression

and other psychiatric diagnoses were definitely caused by brain chemical imbalances.

Now that they feel they have exhausted that possibility and come up with nothing,

Many drug companies are turning away from their former allies,

and are leaving psychiatrists and GPs to fend for themselves

without the massive financial supports given to psychiatry

and psychiatric research during the past half-century.

(<http://dana.org/Cerebrum/Default.aspx?id=39489>, accessed 16th May 2016.)

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**No. 57:** In a 2007 article, Australian British-based psychologist Dorother Rowe,

the author of many books on mental health, the best known being

*Depression: The Way out of your Prison,* wrote,

“There never has been any evidence that any brain chemical was depleted

when a person was depressed.

However, psychiatrists kept hoping that one day their hypothesis

that depression was caused by a chemical imbalance

would be proved to be right.”

(Dorothy Rowe, “Real causes of depression”, Saga, February 2007, http://dorothyrowe. com.au/ articles/item/192-the-real-causes-of-depression-february-2007, accessed 24 November 2013.)

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**No. 58:** In this article, Dorothy Rowe including the following signification information:

“Now, thirty years after the hypothesis was first introduced,

the Royal College of Psychiatrists and the Institute of Psychiatry

have accepted that depression isn’t caused by a chemical imbalance.

But you will find this out only if you visit their websites.

They haven’t issued a press release saying ‘We were wrong’”.

(Dorothy Rowe, “Real causes of depression”, Saga, February 2007, http://dorothyrowe. com.au/ articles/item/192-the-real-causes-of-depression-february-2007, accessed 24 November 2013.)

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**No. 59:** Dorothy Rowe continued,

“On the Institute of Psychiatry’s website there is a lengthy notice

about an important conference on depression to be held in April 2007.

The preamble to this notice reads,

‘Depression cannot be described any longer as a simple disorder of the brain’.

The website of the Royal College of Psychiatrists

has dropped all references to chemical imbalance causing depression.”

This excerpt from this article provides a glimpse of the medical profession’s

reaction to the realisation that the notion of brain chemical imbalances in depression

was becoming increasingly unsustainable.

(Dorothy Rowe, “Real causes of depression”, *Saga,* February 2007, http://dorothyrowe. com.au/ articles/item/192-the-real-causes-of-depression-february-2007, accessed 24 November 2013.)

While the idea of a brain chemical imbalance

was introduced and promoted with immense fanfare and enthusiasm, widely presented

by drug companies and doctors alike as an established fact,

the process of distancing themselves from this idea,

and from their enthusiastic promotion of this idea as an established scientific fact,

was done very quietly, without an apology,

without an admission that the medical profession had got this very wrong.

As Dorothy Rowe states, by 2008, all references to brain chemical imbalances

had been removed from the website of the Royal College of Psychiatrists.

Prior to 2008, the website of the Royal College of Psychiatrists

DID contain references to chemical imbalances

as a characteristic of so-called “mental illnesses” including depression.

However, by 2008, the Royal College of Psychiatrists

had quietly removed all references, without any public announcement.

Removing these references was embarrassing for the Royal College of Psychiatrists,

in effect, an admission that they had got it wrong.

This, in my opinion, is why this College made these very significant changes real quietly,

perhaps hoping that no one would notice.

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**No. 60:** To summarise:

In relation to depression, no brain chemical abnormalities have ever been identified.

A long list of highly qualified professionals,

some of whom I have listed in this presentation,

including psychiatrists, psychologists and other mental health professionals,

have tried to inform both the medical profession

and the public regarding the real facts about depression and brain chemical imbalances.

Therefore, no doctor, no mental professional, and no mental health organisation

should state otherwise;

should imply a connection between brain chemicals and depression,

since, to do so is to misinform, whether done intentionally, or not.

Yet, a long list of medical doctors, mental health groups and organisations,

and other mental health professionals have promoted this misinformation

as if it were an established fact. In a subsequent presentation,

I explain why this apparent contradiction occurs, why respected doctors,

mental health professionals and mental health organisations

would repeatedly misinform their patients and the public

regarding brain chemicals and depression.

I am now going to present some examples of this regrettable practice,

Beginning with examples I provided in the presentation on Section One of this course,

The presentation on chemical imbalances according to the prevailing view,

presentation 1.4.

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**No. 61:** In 1984, The highly influential American psychiatrist Nancy Andreasen

stated unequivocally in her 1984 book *The Broken Brain:*

*The Biological Revolution in Psychiatry* that,

“One suffers from a serotonin deficiency in the brain,

while the other suffers from a norepinephrine deficiency.”

Also in this book, Nancy Andreasen spoke of the need for medication

“to correct the underlying chemical imbalance”.

Both statements are wrong, and should never have been made.

(Nancy Andreasen, *The Broken Brain: The Biological Revolution in Psychiatry*,

New York: Harper & Row, 1984, pps. 133, 256.)

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**No. 62:** Daniel Amen is a well-known American psychiatrist.

He has written over 30 books,

five of which have been on the *New York Times* bestsellers list.

In his 1999 book, *Change your Brain, Change your Life*, Daniel Amen wrote:

“Depression is known to be caused by a deficit of certain neurochemicals

or neuro-transmitters, especially norepinephrine (noradrenaline) and serotonin.”

These claims are absolutely NOT true.

They should never have been made by Dr. Daniel Amen.

(Daniel Amen, *Change Your Brain, Change Your Life: The Breakthrough Program for Conquering Anxiety, Depression, Obsessiveness, Anger, and Impulsiveness*, Harmony, 1999, p. 47.)

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**No. 63:** Dr. Richard Harding has been a prominent American psychiatrist

 for several decades.

In 2001, when he was the president of the American Psychiatric Association,

Dr. Harding wrote in the popular *Family Circle* magazine that,

“We now know that mental illnesses—such as depression or schizophrenia—

are not ‘moral weaknesses’ or ‘imagined’,

but real diseases caused by abnormalities of brain structure and

imbalances of chemicals in the brain”.

Dr. Harding should not have stated this in relation to depression and brain chemicals,

As this statement constitutes misinformation.

(Richard Harding, “Unlocking the Brain’s Secrets”, in *Family Circle* magazine, 20 November 2001, p. 62.)

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**No. 64:** Also in 2001, the year he won the Irish Medical Journalist of the Year,

Irish general practitioner and *Irish Times* medical correspondent

 Dr. Muiris Houston wrote:

"Depression, in my view, is no different from diabetes.

In one you take insulin and in the other you take Prozac

or some other antidepressant.

Both substances are simply designed to replace natural chemicals

missing from the body".

Much of this passage is factually incorrect.

Dr. Houston’s assertion that depression is not different from diabetes

is completely incorrect, from a scientific standpoint.

If Dr. Muiris Houston or any other doctor

diagnosed diabetes like they diagnose depression,

without any tests whatsoever, without any laboratory confirmation of any description,

they would quickly and repeatedly find themselves facing

either a serious Medical Council complaint, being sued for medical negligence, or both.

Dr. Houston’s equating insulin and Prozac as both being

“both designed to replace natural chemicals missing from the body”

is seriously incorrect and misleading.

While this is completely true of insulin, it cannot be said of Prozac.

How can claims of replacing missing chemicals be rightly made,

when it has never been demonstrated scientifically that any such chemicals are missing

to begin with.

Dr. Muiris Houston, *Irish Times*, 17 December 2001.

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**No. 65:** In her 2003 book *Depression: What You Really Need to Know,*

Canadian psychiatrist D. Virginia Edwards wrote than in depression:

“The brain has too few neurotransmitters in the gap (between nerve cells)”.

There is no scientific basis for this claim.

(Dr. D. Virginia Edwards, *Depression: What You Really Need to Know*, London: Constable & Robinson Ltd., 2003, pps. 75-76.)

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**No. 66**: Dr. Sabina Dosani was a psychiatrist at the Maudsley Hospital, London

when she wrote the 2005 edition of her book,

*Defeat Depression: Tips and Techniques for Healing a Troubled Mind*.

In this book, she wrote:

“Low levels of the neurotransmitter serotonin lead to depression . . .

 when you’re depressed, noradrenaline is released from brain cells at a snail’s pace,

so activity levels plummet.”

These assertions should never have been made, as they have no basis in truth.

(Sabini Dosani, *Defeat Depression: Tips and Techniques for Healing a Troubled Mind*, Oxford: The Infinite Ideas Company Ltd: 2005, p. 55 and 110.)

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**No. 67:** Canadian psychiatrist Kwame McKenzie is the author of the 2006 book,

*Understanding Depression*. This book was endorsed by the British Medical Association.

Dr. McKenzie was then professor of psychiatry at the University of Toronto.

In this book, Dr. McKenzie informed his readers that:

“the levels of (these) neurotransmitters are low in depression.”

Complete misinformation, presented as a fact.

(Kwame McKenzie, *Understanding Depression*, Family Doctor Publications in association with the British Medical Association, 2006, p. 72.)

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**No. 68:** Dr. McKenzie further informed his readers that:

“In depression there are physical changes to the way in which your body works

and antidepressants can help put things back to normal . . .

the levels of these neurotransmitters are low in depression—

it’s as if the baton were being dropped.”

There are two pieces of misinformation in this passage.

The levels of neurotransmitters are NOT low in depression,

And antidepressants cannot rightly be claimed to put something back to normal

That has not been found to abnormal to begin with.

(Kwame McKenzie, *Understanding Depression,* Family Doctor Publications

in association with the British Medical Association, 2006, p. 72.)

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**No. 69:** Irish Psychiatrist Siobhan Barry has been a leading figure in Irish psychiatry

for many years. In the 2006 book, *Understanding Mental Health,*

Dr. Barry wrote the following in relation to depression:

“Irregularities in brain chemistry can involve substances called neurotransmitters

and electrolytes”.

Dr. Barry should not have written this, as there is no reliable evidence to confirm it.

(Siobhan Barry, in *Understanding Mental Health*, Dublin: Blackhall Publishing, 2006, p. 58.)

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**No. 70:** Irish GP Dr. Harry Barry has written several books on mental health.

He has become a nationally respected commentator on mental health in Ireland.

In his 2007 book *Flagging the Problem: A New Approach to Mental Health*,

Dr. Harry Barry wrote that:

“The three mood cables, which communicate using serotonin, noradrenaline

and dopamine, are normally depleted in varying degrees during depression” .

This is simply not true, and therefore this statement should not have been made.

(Harry Barry, Flagging the Problem: A New Approach to Mental Health,

Dublin: Liberties Press, 2007, pps. 135, 33-34, 83, 145.)

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**No. 71:** Dr. Caroline Shreeve is a British GP with a special interest in mental health.

She trained in psychiatry and has worked as a GP in Australia and in the United Kingdom.

She is the author of sixteen books including

*Dealing with Depression: Understanding and Overcoming the Symptoms of Depression*.

In this 2010 book, Dr. Shreeve informed her readers that:

“Dopamine, serotonin and noradrenaline . . . are known as the monoamines . . .

 Monoamine supplies are low in depression.”

This statement is NOT true, and therefore constitutes misinformation.

(Caroline Shreeve, *Dealing with Depression: Understanding and Overcoming*

 *the Symptoms of Depression*, London: Piatkus, 2010, p. 39.)

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**No. 72:** In his 2010 book *Unhinged: The Trouble With Psychiatry—a Doctor’s*

*Revelations about a Profession in Crisis,*

psychiatrist Daniel Carlat comes clean about not coming clean with his patients.

Regarding having just informed a patient that the antidepressant Lexapro

worked by increasing serotonin levels in the brain, he admitted:

“I didn’t tell her that, despite my training at Harvard’s Massachusetts General Hospital,

I have no idea how Lexapro works to relieve depression,

nor does any psychiatrist.

There is no direct evidence of a disorder of reduced serotonin.”

In other words, there is no evidence of a chemical imbalance of serotonin

or any other brain chemical in depression.

But that is not what he told his patient.

(Daniel Carlat, *Unhinged: The Trouble with Psychiatry—a Doctor’s Revelations about a Profession in Crisis,* London: Free Press, 2010, p. 13.)

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**No. 73:** In her 2012 book, *Living with Depression:*

*Why Biology and Biography Matter Along the Path to Hope and Healing*,

American psychologist Deborah Serani incorrectly wrote that,

in relation to how brain cells communicate with each other,

“These signaling networks can also show disruptions in the production

and/or absorption of brain chemical messengers, called neurotransmitters”.

(Deborah Serani, *Living with Depression: Why Biology and Biography Matter Along the Path to Hope and Healing,* 2012, p.19.)

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**No. 74:** Dr. Tim Cantopher is a British psychiatrist.

He is currently attached to the Priory Hospital in Woking, in Surrey,

in the United Kingdom.

Dr. Cantopher was featured in the *Guardian* newspaper Special Report

on antidepressants on the 21st of November 2013.

In this special report, Dr. Cantopher was quoted as saying that,

“Antidepressants do work, but only for real clinical depression,

the type involving a chemical imbalance in the brain”.

Dr. Cantopher should never have spoken these words for a report on depression

In a major British newspaper, read by thousands of people, who will believe his words,

Given his status as a trusted medical doctor.

(Dr. Tim Cantopher, in *The Guardian* special report on antidepressants, *The Guardian*,

21 November 2013.)

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**No. 75:** Dr. Tim Cantopher is also the author of the best-selling book, *Depressive Illness:*

*The Curse of the Strong,* the third edition of which was published in 2012.

On the first page of this book, this prominent British psychiatrist wrote

If I were to perform a lumbar puncture on my patients

(which, new patients of mine will be pleased to hear, I don’t),

I would be able to demonstrate in the chemical analysis

of the cerebro-spinal fluid (the fluid around the brain and spine),

a deficiency of two chemicals.

This too, completely misinforms the many readers of this book,

and should never have been written.

(Tim Cantopher, *Depressive Illness: The Curse of the Strong*, 3rd edition, Scheldon Press, 2012, p.1.)

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**No. 76:** American family physician Greg Castello has created many YouTube videos

on health matters. In a May 2013 video entitled “Depression, Anxiety, OCD and More:

Serotonin the Master chemical” and the accompanying text, Dr. Castello said:

“Many people suffer from depression and anxiety.

They share a common condition with those that have Obsessive Compulsive Disorder

(OCD), anorexia nervosa, bulimia, Post Traumatic Stress Disorder (PTSD)

and even insomnia. They are all due to a deficiency of serotonin,

a neurotransmitter in the brain.”

This statement is completely incorrect, is profoundly misinforming,

and should never have been made.

(Greg Castello, “Depression, Anxiety, OCD and More: Serotonin the Master chemical”, YouTube video, 12 May 2013, [https://www.youtube.com/watch?v=6YO6SMGHn\_M,](https://www.youtube.com/watch?v=6YO6SMGHn_M)  accessed 08 June 2014.)

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**No. 77:** British general practitioner Dr. Chris Steele is well known in Britain and beyond

for his many media appearances as a medical expert over several decades.

On the British TV channel ITV’s *This Morning* show on 18 March 2014,

in response to a viewer’s call to the show, Dr. Chris Steele said:

“She had a lot of stress.

It drained her brain of natural chemicals and she got depression.”

This assertion is completely untrue.

This popular show has an average audience of over one million viewers per show,

All of whom were misinformed regarding depression and brain chemicals

by this trusted doctor.

(“This Morning”, ITV, 18th March 2014.)

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**No. 78:** On 12 August 2014, the day after the death of actor Robin Williams,

ITV’s *This Morning* programme again focused on depression.

Well known British GP Dr. Dawn Harper regularly appears on this programme

as a medical expert. On this occasion, Dr. Harper informed viewers that depression:

“Is very much a chemical illness . . . The reason that antidepressants work

is that we know that they alter the chemicals in the brain and rebalance them”.

These statements are inaccurate and misleading for the, on average,

over a million viewers who regularly watch this programme.

As we have seen in this presentation, depression has not been scientifically identified

to be a chemical illness at all.

And given, as we have also seen in presentation,

that no brain chemicals have been identified to be out of balance to begin with

in relation to depression,

no doctor can rightfully claim that “we know”, that is, “we doctors know”,

that antidepressants balance brain chemicals.

(Dr. Dawn Harper, medical expert on ITV’s “This Morning”, during a discussion on depression on 12 August 2014.)

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**No. 79:**  Also in 2014, the Royal College of Surgeons of Ireland published an official tweet in which is was unequivocally stated that,

“Mental health difficulties are chemical imbalances in your brain”.

The background in this tweet includes a picture of a nice doctor in a white coat,

looking both friendly and clinical, possibly designed to look both friendly and scientific.

But as we have seen in this presentation, no such brain chemicals imbalances

have even been identified as occurring in the brain, let alone linked to depression.

Therefore this official tweet from the Royal College of Surgeons in Ireland constitutes

clear misinformation, and should never have been published.

A response to this tweet was quickly posted by Tallaght Trialogue,

who correctly pointed out that this statement was “simply untrue”.

Many people, including me, when I found out about this tweet,

contacted the Royal College of Surgeons,

expressing concern regarding the inaccuracy of this tweet.

I received no response.

I know that this tweet remained publicly available for many months,

and may indeed still be available on Twitter.

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**No. 80:** Walk in My Shoes is a major mental health campaign that has been going on in

Ireland for some time.

This initiative has become very popular and widely known in Ireland and beyond.

It is enthusiastically supported by some of Ireland’s best known celebrities.

According to the Walk in My Shoes website, this initiative is

Stated to be, “a mental health awareness and education campaign

of St. Patrick’s Mental Health Services”.

St. Patricks Hospital is a private psychiatric hospital in Dublin, Ireland.

In this presentation, we will focus briefly on aspects of their stated “education campaign”.

(<http://www.walkinmyshoes.ie/about/>, accessed 16th May 2016.)

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**No. 81:** This website contains a series of downloadable ebooks,

described as “mental health information ebooks”.

As you can see, there are 5 ebooks, each designed for a different audience,

including primary school teachers; secondary school teachers; third level education;

corporate; and for each individual.

Much of the information is the same in each of these ebooks.

Among other things, it is stated that these ebooks contain advice and information

regarding the “causes of mental health problems”.

(<http://www.walkinmyshoes.ie/news/free-information-packs-download/>, accessed 16th May 2016.)

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**No. 82:** I first looked at the ebook for individuals,

entitled “Your Mental Health Awareness”.

(<http://www.walkinmyshoes.ie/wp-content/uploads/2016/04/Mind-your-selfie_your-mental-health.pdf>, accessed 16th May 2016.)

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**No. 83:** The second inside page of this ebook addresses

“Causes of mental health difficulties”.

As is always the case when the causes of mental health difficulties are being considered

From a medical perspective, possible biological factors are first mentioned,

conveying the impression that biological factors

are both the most important and the most identified factors.

The second-listed biological factor,

which according to this ebook can cause mental health difficulties,

is “chemical imbalances in the body”.

This constitutes misinformation, and should never have been included in this ebook.

Incidentally, we have seen in presentation 2.6, there is no established scientific basis

to support claims that depression is a genetic illness.

Therefore, the first-listed cause of mental health difficulties,

in relation to depression, is also incorrect. It is misinformation,

and if truth and accurate information were the main priorities

of the creators of this website,

would not have been included and presented as if it is an established fact.

(<http://www.walkinmyshoes.ie/wp-content/uploads/2016/04/Mind-your-selfie_your-mental-health.pdf>, accessed 16th May 2016.)

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**No.84:** As I mentioned a few slides ago, the “Walk in My Shoes” website

contains a series of 5 downloadable ebooks, aimed at primary school teachers,

secondary school teachers, third level colleges, the corporate sector,

and one for individuals, the one to which I have just been referring.

The misinformation regarding depression and brain chemicals appears in 4 of

these 5 ebooks, the exception being the ebook for primary school teachers.

While obviously I do not know why the authors made an exception of the ebook

for primary school teachers,

one possible reason might be that the assertion that chemical imbalances

as a primary cause of distress in children might just be too difficult to sell.

An inevitable consequence of all of this, is that secondary school teachers,

third level colleges, and the corporate sector, in addition to individuals

who download the ebook for their own education; all of these important groups in society

become seriously misinformed regarding the causes of depression.

(<http://www.walkinmyshoes.ie/news/free-information-packs-download/>, accessed 16th May 2016.)

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**No. 85:** On the second page of the secondary school teachers’ ebook,

the following appears: “chemical imbalance” is the first-named factor

 that may contribute to the development of mental illness,

a category that includes depression.

For the reasons already described, this is wrong, and should not have been included.

(<http://www.walkinmyshoes.ie/wp-content/uploads/2016/04/Mind-Your-Selfie-Secondary-Ebook.pdf>, accessed 16th May 2016.)

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**No. 86:** The ebook for colleges contains a caption that is identical to the one

that appears in the ebook for individuals.

In this caption, it is wrongly asserted that biological factors that can cause

mental health difficulties include chemical imbalances,

and as I discussed in relation to the equivalent caption in the ebook for individuals,

genetic factors.

(<http://www.walkinmyshoes.ie/wp-content/uploads/2016/04/Mind-your-selfie_college.pdf>, accessed 16th May 2016.)

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**No. 87:** Precisely the same situation pertains regarding the ebook

for the corporate sector, in relation to chemical imbalances and to genetics.

(<http://www.walkinmyshoes.ie/wp-content/uploads/2016/04/Mind-your-selfie_corporate.pdf>, accessed 16th May 2016.)

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**No. 88:** Brain Basics is the title of a section of the website

of the American National Institute of Mental Health,

which is endorsed by the US government.

The National Institute of Mental Health informs visitors to the site that it is

“Transforming the understanding and treatment of mental illnesses”.

([http://www.nimh.nih.gov/health/educational-resources/brain-basics/brain-basics.shtml#Brain-Basics-in-Real-Life](http://www.nimh.nih.gov/health/educational-resources/brain-basics/brain-basics.shtml), accessed 16th May 2016.)

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**No. 89:** Lower down this page, this appears.

This entire passage is about neurotransmitters, including serotonin.

Many mental health sites contain supposed explanations of neurotransmitter function,

which is what these passages amount to.

What is never stated in such descriptions is that they are a red herring.

Such passages are always presented

as though they were known to be relevant to depression.

Either an explicit or an implicit reference is made to depression being the result of

this process of neurotransmitter function not working properly.

It is never stated that no scientific evidence of any such neurotransmitter malfunction

has ever been scientifically established to exist, something which any reasonable person

might consider a prerequisite to any such claims.

In these passages, two such references are explicitly made

to known neurotransmitter malfunction in depression.

The US government-backed National Institute of Mental Health,

possibly the most influential mental health body in the world,

is prepared to misinform its many readers that,

“Mental illnesses, such as depression, can occur when this process

(that is, the process of neurotransmitter function) does not work properly”.

A second incidence of blatant misinformation occurs here also;

“Research shows that people with depression often have

lower than normal levels of serotonin”.

This is a complete untruth. Research has shown no such thing.

Research has not even managed to establish normal parameters

for serotonin levels in the brain.

Very regrettably, it is a case of, why let the truth get in the way of a good story.

Both of these assertions are factually incorrect and should never have been made.

([http://www.nimh.nih.gov/health/educational-resources/brain-basics/brain-basics.shtml#Brain-Basics-in-Real-Life](http://www.nimh.nih.gov/health/educational-resources/brain-basics/brain-basics.shtml), accessed 21st April 2016.)

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**No. 90:** Regrettably, another highly influential American mental health group,

the American Psychiatric Association, continue to be prepared to misinform the public

in relation to brain chemicals and depression.

On their official website, the American Psychiatric Association includes a webpage

intended to inform the public about depression.

(<https://www.psychiatry.org/patients-families/depression/what-is-depression>, accessed 16th May 2016.)

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**No. 91:** This webpage contains a section on risk factors for depression,

The first of which is stated to be “Differences in certain chemicals in the brain”.

As we have seen in this presentation, no differences in brain chemicals

have ever been identified in depression in spite of over 50 years of intensive research

seeking to do so.

It is therefore disgraceful that the leading psychiatric organisation in America,

one of the leading mental health groups in the world, is prepared to publish

such incorrect information on their website,

misinformation that will inevitably mislead the large numbers of the public

who do not realise that this statement, from a group of doctors they trust, is in fact

untrue.

Similarly, the American Psychiatric Association seeks to convince the reader

that genetic causes are the second most important cause of depression.

As we have seen in presentation 2.6., in Section Two of this course,

No genetic abnormalities have been identified in relation to depression.

(<https://www.psychiatry.org/patients-families/depression/what-is-depression>, accessed 16th May 2016.)

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**No. 92:** In 2005, the AmericanPsychiatric Association published a brochure entitled

“Lets Talk Facts About Depression”, an interesting choice of title

given that not everything in this brochure was factual.

According to this supposed factsheet, “Antidepressants may be prescribed

to correct imbalances in the levels of chemicals in the brain”.

Given that no imbalances in the levels of chemicals in the brain that need correcting

have been found in relation to depression, this assertion should not have been made.

(<https://www.ndsu.edu/fileadmin/counseling/APAdepression.pdf>, accessed 16th May 2016.)

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**No. 93:** The Mayo Clinic in America is one of world’s most prestigious

and respected health centres in the world.

The Mayo Clinic website contains a section on depression, which includes a video

entitled “Antidepressants – How they help relieve depression”.

The illustration on the video depicts serotonin, and sets the tone for what is to come.

(<http://www.mayoclinic.org/diseases-conditions/depression/multimedia/antidepressants/vid-20084764>, accessed 16th May 2016.)

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**No. 94:** The video and the accompanying transcript contain the following claims:

“If you have depression, you may have a serotonin imbalance.

Your overall level of serotonin may be low, and some of it may be reabsorbed too soon.

As a result, communication between the brain cells is impaired.”

Notice how the work “may”, which appears 3 times in the first two sentences,

becomes a definite “is” in the final sentence,

leaving the reader with a sense of definiteness about these assertions.

Every one of these claims is incorrect.

Since there are no identified chemical imbalances in depression,

Every one of these claims is incorrect and therefore constitutes misinformation,

Originating from one of the most trusted and respected medical centres in the world.

(“Antidepressants—How they help relieve depression”, video and transcript, “Diseases and Conditions” webpage, mayo Clinic website, <http://www.mayoclinic.org/diseases-conditions/depression/multimedia/antidepressants/vid-20084764>, accessed 01 October 2014.)

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**No. 95:** American journalist and author Robert Whitaker

has taken a major interest in mental health over the past 20 years.

He is the author of many books and articles about mental health including the 2010 book

 *Anatomy of an Epidemic: Magic Bullets, Psychiatric Drugs and the Astonishing Rise*

*of Mental Illness in America,* winner of the Investigative Reporters and Editors (IRE)

best investigative journalism book of 2010.

He is also the author of the 2001 book *Mad in America*.

A 1998 Boston Globe article series he co-wrote on psychiatric research

was a finalist for the 1999 Pulitzer Prize for Public Service.

He has won several other awards, including the 1998 National Association of Science

Writers’ Science in Society Journalism Award for best magazine article.

Robert Whitaker kindly wrote the foreword to my 2015 book*,*

 *Depression Delusion: The Myth of the Brain Chemical Imbalance.*

In his foreword, Robert Whitaker wrote the following:

“Yet, and this is the amazing thing,

it is the false story that took hold in the public mind,

rather than the scientific one that told of a hypothesis that doesn’t pan out.”

Robert Whitaker was here referring to the fact that it is the false story,

the falsehood that brain chemical imbalances are a known feature of depression,

that has taken hold within society, rather that the truth,

the reality that no such imbalances have ever been identified in depression.

This is not surprising, given how much the public have been misinformed on this matter

by mental health professionals they trust.

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**No. 96:**  Given the long list of examples I have provided in this of doctors,

prominent medical centres and mental health organisations,

a list that is my no means a complete list, fundamentally misinforming the public

in relation to depression and brain chemical imbalances.

you would be forgiven for wondering if there has been

a systematic conspiracy to misinform that has been endemic

within the medical profession on this issue for up to five decades now.

Or perhaps the medical profession have as a group

become delusional about this matter,

remaining convinced that brain chemical imbalances are a definite feature of depression

despite this never having been demonstrated scientifically?

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**No. 97:** In conclusion:

There never has been any reliable scientific evidence

that confirmed any brain chemical imbalance in relation to depression.

1. [↑](#endnote-ref-1)