

Neurospiritual

Scriptures Illustrated by Brain Science

Study



The Neurospiritual Study

uses brain science reports to illustrate Scriptures about the heart, soul and mind.



Imagine getting a Smart Device with technology more advanced and complex than any device made so far!

This Smart Device weighs about 3 pounds, is waterproof, never needs to be recharged, and comes with the fastest processor on the planet. With it, you will learn and master many skills and accomplish great goals!

This Smart Device also has a very dangerous function! It will help you pursue harmful activities and obtain sinful things that feel really good. The danger is that you will have total control of your device to do, get and accomplish what you like, whether good or bad!

God gave you your Smart Device when you were in your mother's womb. It is your brain!

Scientists describe the human brain as the most complex organ in the whole universe! Therefore, it could be called the Smartest Device!





We must understand and protect our smartest device (brain heart, soul, mind):

“Keep your heart with all diligence, for out of it spring the issues of life.”

Proverbs 4:23

Burton Coffman Commentary on Proverbs 4:23

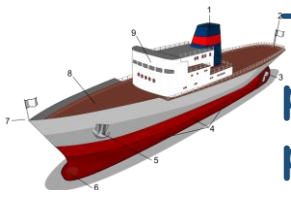
"Keep thy heart with all diligence ... etc." The heart, as the word is used in the Bible, means the mind, which is the center of human intelligence, emotions and the will. The fact here stated is that the whole moral conduct of human life, and its every action, attitude and purpose are determined by what one thinks and believes.

We are only studying two areas of the brain:

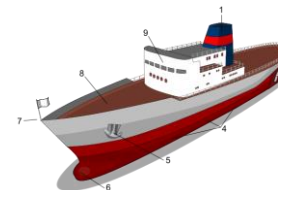
1. What scientists call the reward (dopamine) pathway which is activated by love, devotion, desire, lust, temptation, and coveteousness.

2. Your brain has the ability to change, grow, learn, and even rewire (renew) itself. Scientists call this neuroplasticity.

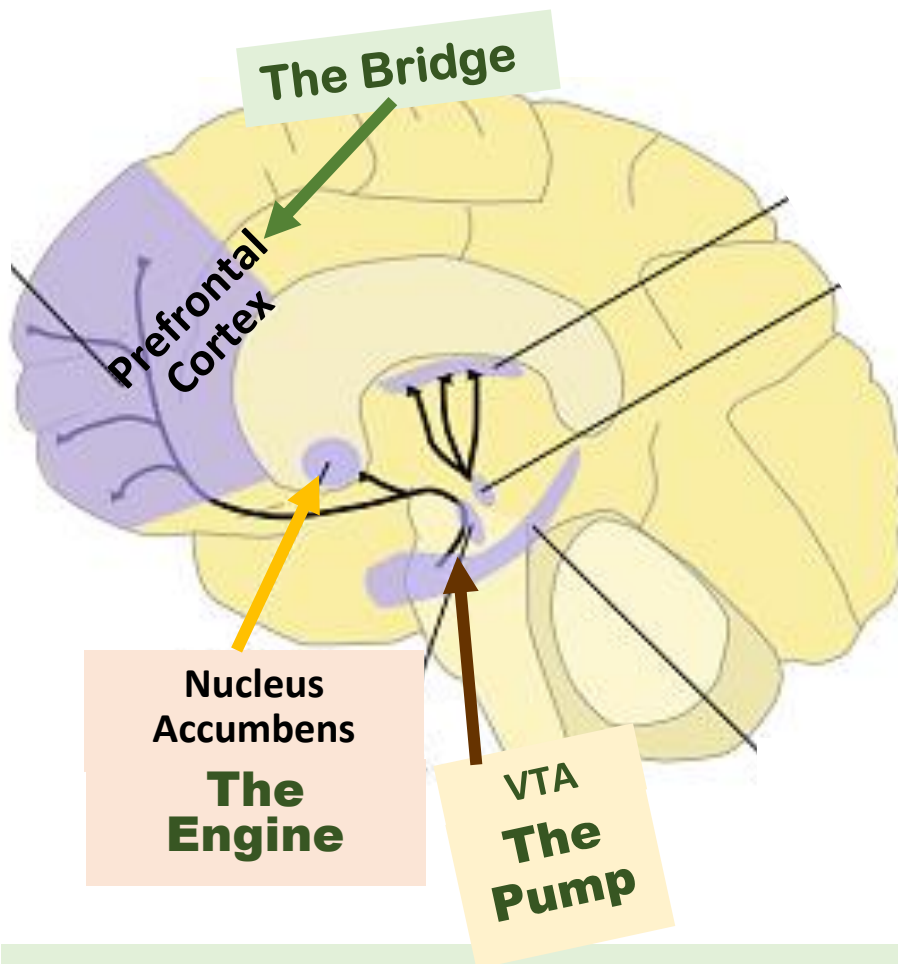




Think of your reward (dopamine) pathway as a ship having a fuel pump, engine and bridge (main deck):

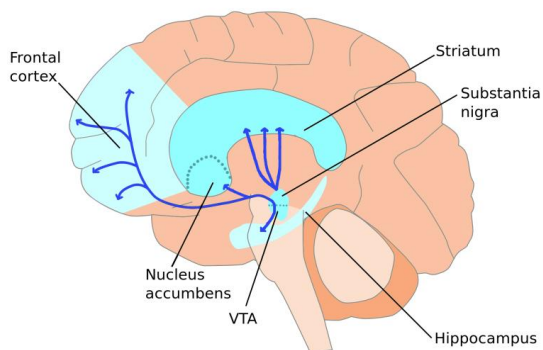


Your reward pathway begins at the ventral tegmental area (VTA). It functions like a ship's fuel pump. When you see something you would like to have, do or accomplish, it manufactures the dopamine and sends the dopamine signal to the nucleus accumbens (the engine).



The nucleus accumbens functions like a ship's engine. When it receives the dopamine signal, it generates motivation and attention to help you accomplish the goals you choose.

Then, there is the prefrontal cortex, which is responsible for judgment, decision-making, perspective-taking, and self-regulation. The prefrontal cortex, like the bridge of a ship, steers your behavior. Neuroscientist Dr. Marc Lewis (adapted)



“Jesus said to him, “You shall love the Lord your God with all your heart, with all your soul, and with all your mind.” Matthew 22:37

Let’s apply Matthew 22:37 to the Ship Illustration.

Gospel Advocate Commentary on the Gospel According to Matthew.

Jesus answered him, "Thou shalt love the Lord thy God with all thy heart, and with all thy soul, and with all thy mind." That is, one must love God with his best, **highest** faculties, with the heart; that is, one must love God with all of his **affections** and have his **desires** fixed on Him. "With all thy soul" includes all of one's **spiritual** nature; "with all thy mind" means that all of the **intellectual** powers must be brought into subjection to the truth of God. It may be that Jesus meant to make no distinction between **"heart," "soul," and "mind"**; that he meant that one must surrender his entire being to the will of God and use the combined powers and faculties of his being to promote the honor and glory of God.

Vine’s Dictionary Definitions

Heart 1: καρδία (Strong's #2588 — Noun Feminine — **kardia** — kar-dee'-ah) "the heart" (Eng., "cardiac," etc.), the chief organ of physical life ("for the life of the flesh is in the blood," Leviticus 17:11), occupies the most important place in the human system. By an easy transition the word came to stand for man's entire **mental** and **moral** activity, both the rational and the emotional elements.

Soul 1: ψυχή (Strong's #5590 — Noun Feminine — **psuche** — psoo-khay') the seat of personality, the seat of the sentient element in man, that by which he perceives, reflects, feels, **desires**, the seat of **will** and **purpose**.

Mind A — 1: νοῦς (Strong's #3563 — Noun Masculine — **nous** — nooce) "mind," denotes, speaking generally, the seat of reflective consciousness, comprising the faculties of perception and **understanding**, and those of feeling, judging and **determining**.

Your Brain is Designed to Pursue! 3.



Your brain is not built like the frog's, who sits and waits for things to come to him!

Your brain is designed to pursue, acquire and do things you like.



“The reward pathway is considered a dopamine pathway, because dopamine is the primary chemical used to communicate between neurons.

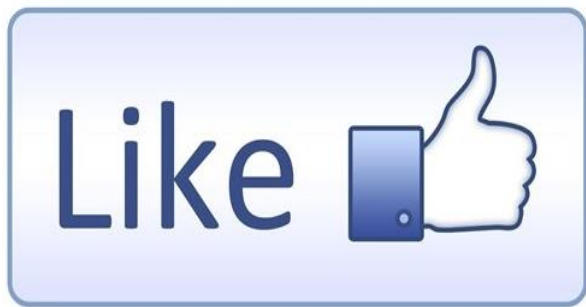
So, things in our environment that can activate this pathway, causing dopamine release, will likely be things we like and that we are motivated to pursue. Foods, physical touch, sex, music, winning games or competitions, playing video games, getting money, etc. can activate your brain's dopamine reward pathway.” Dr. Tiffany Rogers

Your Brain is Designed to Pursue! 3.



God hardwired our brains to pursue what we like:

“Whatever your hand finds to do, do it with your might...” Ecclesiastes 9:10



**“Then God blessed them,
and God said to them,
‘Be fruitful and multiply;
fill the earth and subdue it;
have dominion...’” Genesis 1:28**

Strong’s Dictionary defines the Hebrew word for “subdue” as to tread down; to conquer, to subjugate.

The English word subjugate is defined as, bring under domination or control, especially by conquest.

Therefore, Genesis 1:28 shows us that men and women were created to subdue, pursue and conquer through conquest!



So, let's say you're ^{4.} hungry. Dopamine will start rising. Then you think about a burger, and it rises more.

It rises even more when you smell and hear the burger sizzling. Dopamine peaks right about your first bite. Then you take some more bites, and it starts to drop off. Finally, it drops back down to normal levels, and you're full. Free Medical Education (adapted)



The rise of dopamine levels could also represent anything new or novel, because dopamine loves novelty. A new car, a just released movie, the latest gadget. This is what sets us above all creation!

Free Medical Education (adapted)



“As newborn babes, desire the pure milk of the word, that you may grow thereby.” 1 Peter 2:2

The Greek (*epipotheo*) for “desire” in 1 Peter 2:2 means “long for.” This suggests great eagerness and an ever-recurring desire for the word of God such as is characteristic of infants in their passionate longing and yearning for the milk which alone constitutes their food. As babes instinctively turn to their mothers’ breasts as the only source of their life, so are all children of God here admonished to desire the spiritual milk which is “without guile,” and which alone can sustain their spiritual life. Gospel Advocate Commentary on 1 Peter 2:2



Our spiritual desires are much more fulfilling than our physical desires:

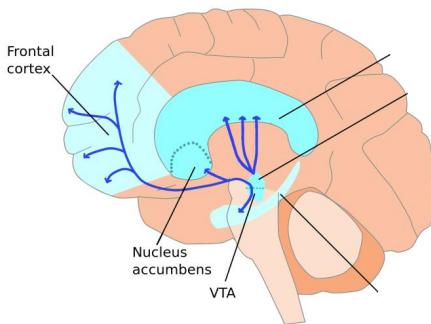
“Delight yourself also in the Lord, and He shall give you the desires of your heart.” Psalm 37:4

“Blessed are those who hunger and thirst for righteousness, for they shall be filled.” Matthew 5:6

The normal pattern of dopamine release looks something like a roller coaster, because in biology what goes up must come down.



Free Medical Education (adapted)



Remember the ship illustration? When we see something we like, the VTA (pump) sends a signal to the nucleus accumbens (engine), which in turn generates motivation and focus.

You can have a spike of dopamine just by ordering dessert. Even though you haven't finished what's on your plate, dessert is something new.



Free Medical Education (adapted)

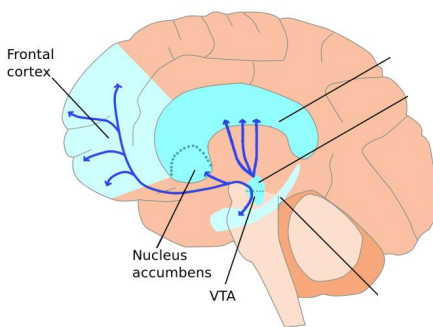
When we diligently seek God, our dopamine rises!

5.

“Incline your ear to wisdom . . . cry out for discernment . . . seek her as silver . . . then you will understand the fear of the Lord, and find the knowledge of God.” Proverbs 2:2-5



Burton Coffman Commentary on Proverbs 2:2-5 - “Yea, if thou cry after knowledge” (Proverbs 2:3). “The seeker after wisdom must be earnest and sincere, as indicated by these words. Furthermore, he must extend himself diligently and search for true wisdom with the same abandon and exertion that men devote to the seeking of earthly treasures.”



“...He who comes to God must believe that He is, and that He is a rewarder of those who diligently seek Him.” Hebrews 11:6

Those who would find God in these ways of His, must seek Him diligently; they must seek early, earnestly, and perseveringly. Then shall they seek Him, and find Him, if they seek Him with all their heart; and when once they have found Him, as their reconciled God, they will never repent the pains they have spent in seeking after Him. Barnes Notes

When we “seek” God with all our “heart,” our dopamine pathway is activated and our focus zooms in on God!

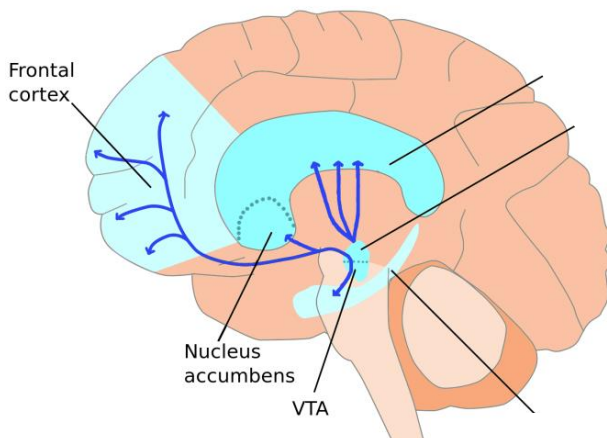
“But from there you will seek the Lord your God, and you will find Him if you seek Him with all your heart and with all your soul.”



“If then you were raised with Christ, seek those things which are above, where Christ is, sitting at the right hand of God.” Colossians 3:1

Dopamine surging in your reward circuitry can override your feelings of what's called satiety or fullness. This is when you stop liking something but still want it.

Free Medical Education (adapted)



Here's the prefrontal cortex (bridge) in charge of judgment. Here's the nucleus accumbens (engine) in charge of generating attraction, desire and craving, and here is the VTA (pump) sending dopamine.

Dopamine goes to the nucleus accumbens and sets up a feedback cycle so you get more and more and more. And then the nucleus accumbens becomes sort of hyperactivated in the presence of cues. And then you get that mechanism of “now appeal”. That’s narrowing of the attraction to the immediate reward. Other activities fall off the radar! Then the connection between the prefrontal cortex (the bridge of the ship) and the nucleus accumbens starts to become compromised. You get executive function fatigue, and the prefrontal cortex simply becomes less efficient self-control. Marc Lewis, Neuroscientist

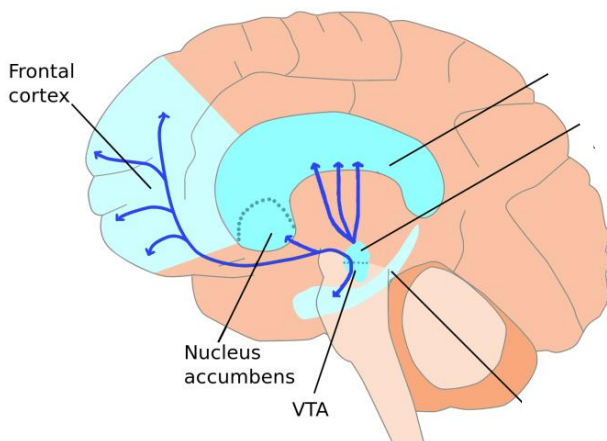
Loving (craving) the things of the world will hijack your dopamine pathway and render you wanting it more and liking it less!

6.

“For I delight in the law of God according to the inward man. But I see another law . . . warring against the law of my mind, and bringing me into captivity to the law of sin...” Romans 7:22,23



Gospel Advocate Commentary on Romans 7:22,23 - The "inward man" is the "mind," the "spirit" of man, as contrasted with the "outward man"—the body, or flesh. This "hidden man of the heart," without which man would not be man, is the spiritual, willing, reasoning being.



While he approved this law of God with his inward man, there was another law in his members—the outward man—warring against this law approved by the inward man.

This law of sin does not fight a battle merely, but carries on a successful campaign against the "law of the mind"—the law of God. Gospel Advocate Commentary on Romans 7:22,23

As we've mentioned before, dopamine is released in response to expectations rather than actual levels of pleasure. It's the drive to get it. It's the craving. The pleasure is caused by an opioid brain chemical.



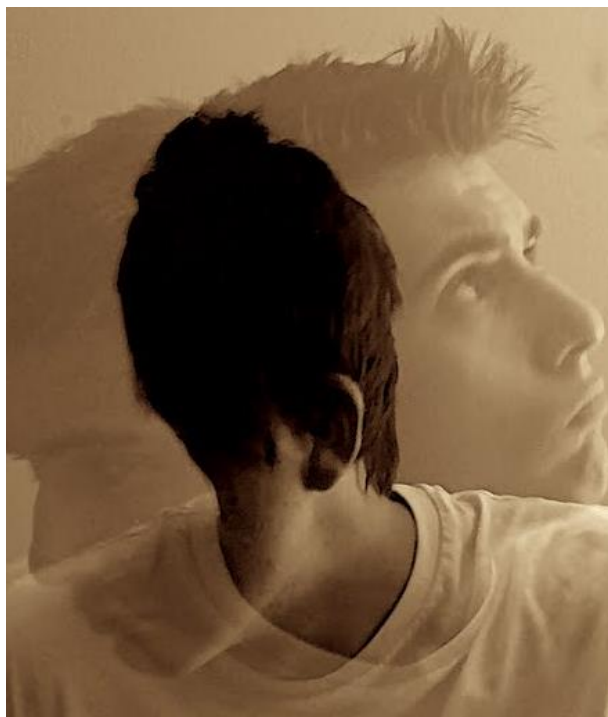
Too much motivation for any thing or activity could be harmful. This will cause the reward pathway to produce too much dopamine.

So, while the reward pathway is important for motivation and for deciding what things in the environment we like, it can also easily be hijacked, creating excessive motivation for behaviors like eating, winning, or sex or for certain chemicals like drugs of abuse.” Dr. Tiffany Rogers

An overactive
dopamine pathway
will drive you nuts!!



“Wars and fights come . . . from your desires for pleasures . . . You lust and do not have . . . you ask and do not receive, because you ask amiss that you may spend it on your pleasures...” James 4:1-4



**How to calm
an overactive
dopamine pathway:**

“Therefore submit to God. Resist the devil and he will flee from you. Draw near to God and He will draw near to you . . . and purify your hearts, you double-minded...”

. . . Humble yourselves in the sight of the Lord, and He will lift you up.” James 4:7-10

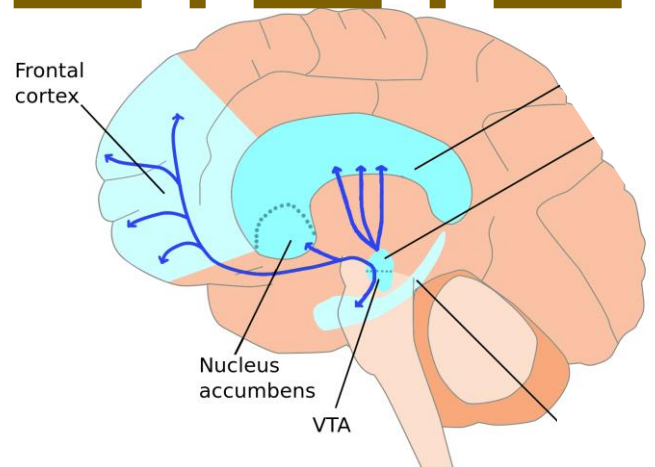


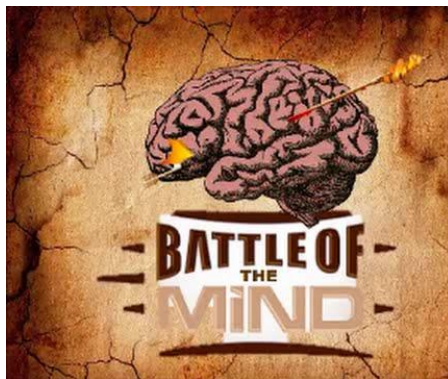
“Be **anxious** for nothing, but in everything by prayer and supplication, with thanksgiving, let your requests be made known to God; ⁷ and the **peace** of God, which surpasses all understanding, will **guard** your **hearts** and minds through Christ Jesus.” Philippians 4:6,7

When we **desire** (worry about) the things of this world, our dopamine pathway will become over activated and unsatisfied.

The result is **anxiety**!

When we desire to **“pray,”** the **“peace** of God” will **“guard”** our dopamine pathway from being overactivated. The result is peace!





“Be **anxious** for nothing, but in everything by prayer and supplication, with thanksgiving, let your requests be made known to God; ⁷ and the **peace** of God, which surpasses all understanding, will **guard** your **hearts** and minds through Christ Jesus.” Philippians 4:6,7

8.

Burton Coffman Commentary on Philippians 4:7

⁷ and the peace of God, which surpasses all understanding, will guard your hearts and minds through Christ Jesus.

The peace of God ... This was described by Hendriksen as "The smile of God reflected in the soul of the believer, the heart's calm after Calvary's storm, the conviction that God who spared not his own Son will surely also, along with him, freely give us all things (Romans 8:32)."[19]

Shall guard your hearts ... The scholars tell us that this is translated from a **military** term signifying a sentinel **guarding** a city. As Philippi was a Roman colony, populated with many retirees from the military establishment of Rome, this must rank as another marvelous analogy drawn by Paul from things which he observed in

Heart 1: καρδιά (Strong's #2588 — Noun Feminine — **kardia** — kar-dee'-ah) "the heart" (Eng., "cardiac," etc.), the chief organ of physical life ("for the life of the flesh is in the blood," Leviticus 17:11), occupies the most important place in the human system. By an easy transition the word came to stand for man's entire **mental** and **moral** activity, both the rational and the emotional elements. Vine's Dictionary

The Power of Your Thoughts



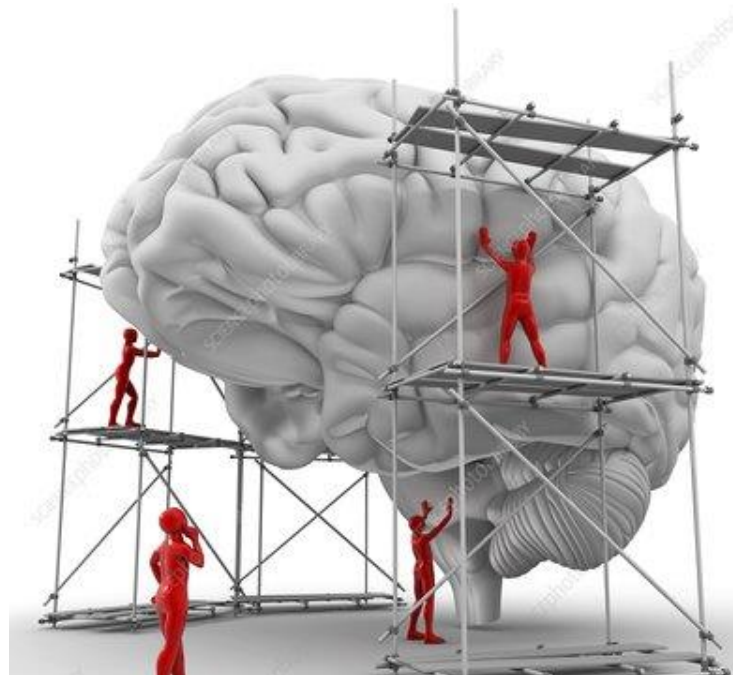
The power of your thoughts has been studied at Harvard Medical School.

Neurologist Alvaro Pascual-Leone instructed a group of volunteers to practice a five-finger piano exercise for two hours a day over five days.

After a week, tests showed that the area of their brains devoted to the piano finger movements had expanded like dandelions spreading on a lawn. However, Pascual-Leone didn't stop there. He extended the experiment to another group, asking them merely to think about the piano practice exercise without moving their fingers.

The test data showed that the same area of their brains had expanded in the same way, proving that mental practice (thought) is just as powerful as physical practice.

Dr. Brad Harrub



God's Thoughts are a "powerful" force in our minds!



God's Word is designed to reside in your brain (heart, soul, mind):

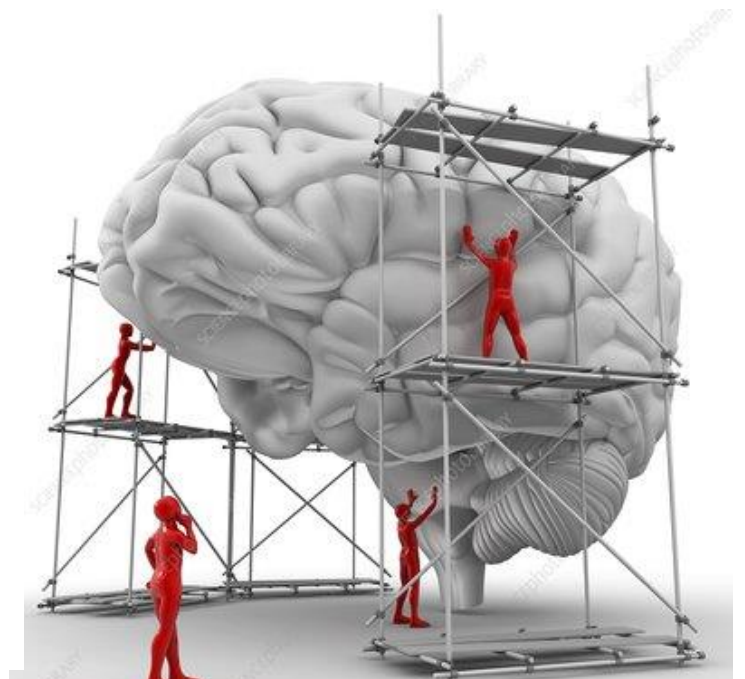
“For the word of God is living and powerful, and sharper than any two-edged sword, piercing even to the division of soul and spirit, and of joints and marrow, and is a discerner of the thoughts and intents of the heart.” Hebrews 4:12

Your brain needs God's Word to function well:

“All Scripture is given by inspiration of God, and is profitable for doctrine, for reproof, for correction, for instruction in righteousness, that the man of God may be complete, thoroughly equipped for every good work.” 2 Timothy 3:16,17

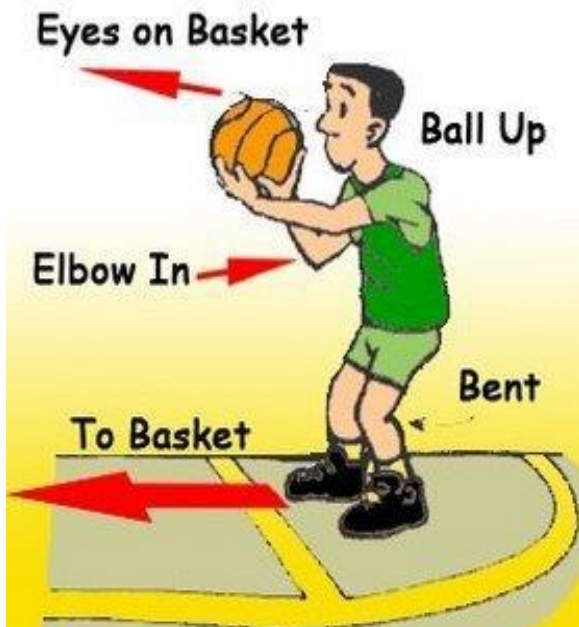
**“So then faith comes by hearing, and hearing by the word of God.”
Romans 10:17**

**“Man shall not live by bread alone, but by every word that proceeds from the mouth of God.”
Matthew 4:4**



Your Brain is Extremely Efficient! 10.

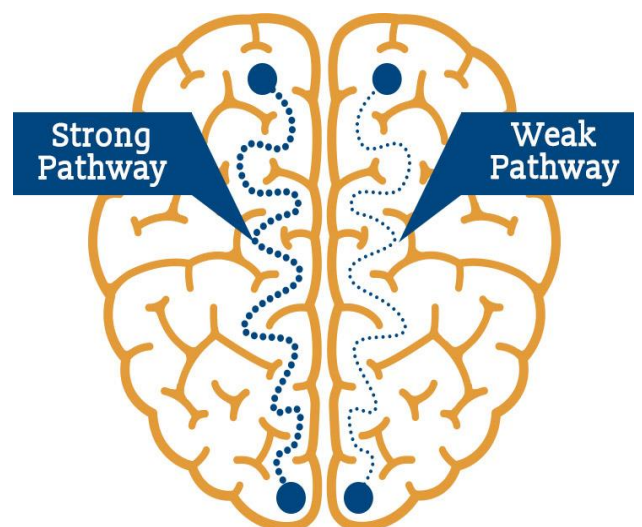
(tasks become skills; skills become instincts/second nature)



Say you're learning how to shoot a free-throw. If it's your first time doing it, you don't yet have a pathway for that movement in your brain. When you're first learning, your brain is like a forest full of trees and dense foliage with no clear pathway between point A and point B. Halo Sports

In order to improve your free-throw, you need to refine and strengthen the free-throw pathway in your brain. The way you do that is through practice. Practice gradually widens the trail through the trees (increases the muscle memory in your brain).

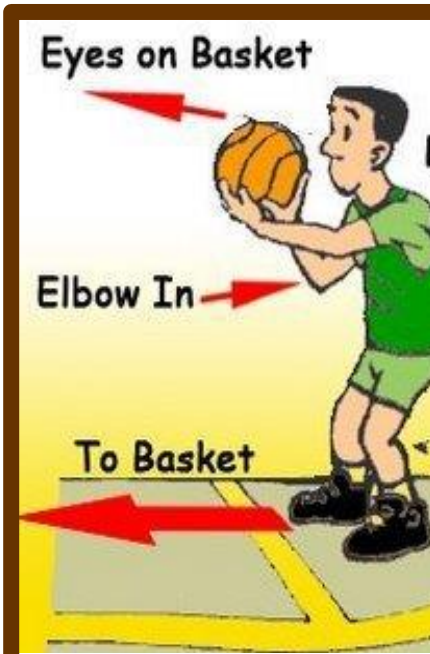
Eventually with enough practice, what started as a trail has become a full-blown highway. Now, you're a master, draining almost every free-throw and the movement is completely second nature (instinctual) Halo Sports



Your Brain is Extremely Efficient!

10.

(with practice, we build good and bad pathways)



“Conformed” refers to a worldly brain pathway.

“And do not be conformed to this world, but be transformed by the renewing of your mind, that you may prove what *is* that good and acceptable and perfect will of God.” Romans 12:2

“Transformed” and “renewing” refer to building new godly pathways in your mind.

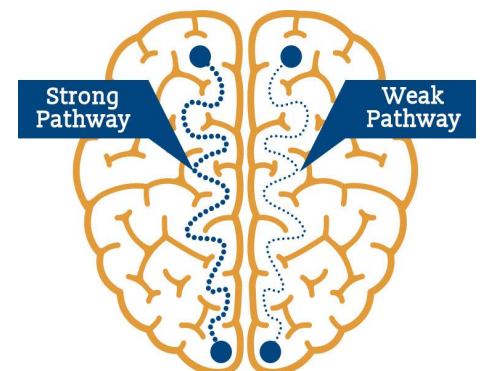
“Put off” refers to abandoning a sinful pathway.

“That you put off, concerning your former conduct, the old man which grows corrupt according to the deceitful lusts, and be renewed in the spirit of your mind, and that you put on the new man which was created according to God, in true righteousness and holiness.” Ephesians 4:22-24

“Put on” refers to beginning to build a godly pathway.

Faith & love are spiritual pathways that grow with practice:

“...Your faith grows exceedingly, and the love of every one of you all abounds toward each other.” 2 Thessalonians 1:3

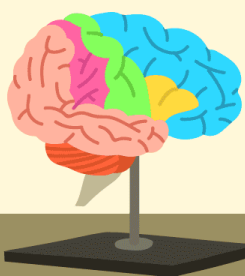




Steph Curry, as a boy, practiced basketball from sun-up to sundown. Imagine there's a boy who lived on the same block who ran the streets doing drugs. The brains of both of these boys became very efficient (addicted/instinctual) at two very different skills. Basketball blessed Steph's life, while the skill of addiction ruined the boy's life!


The 2 Types of Brain Plasticity

What is Neuroplasticity (aka Brain Plasticity)?



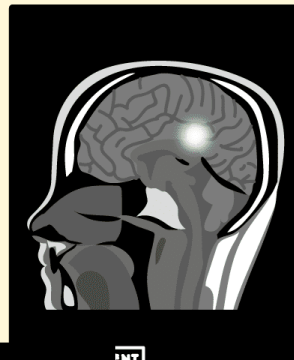
Brain's ability to change and adapt

Type 1: Structural Plasticity



Experiences or memories change a brain's physical structure

Type 2: Functional Plasticity



Brain functions move from damaged area to undamaged area



The human brain is designed to become addicted (turn skills into second nature/instincts):

“Slaves of sin” refers to learning and practicing sinful activities until they become second nature (an addiction):

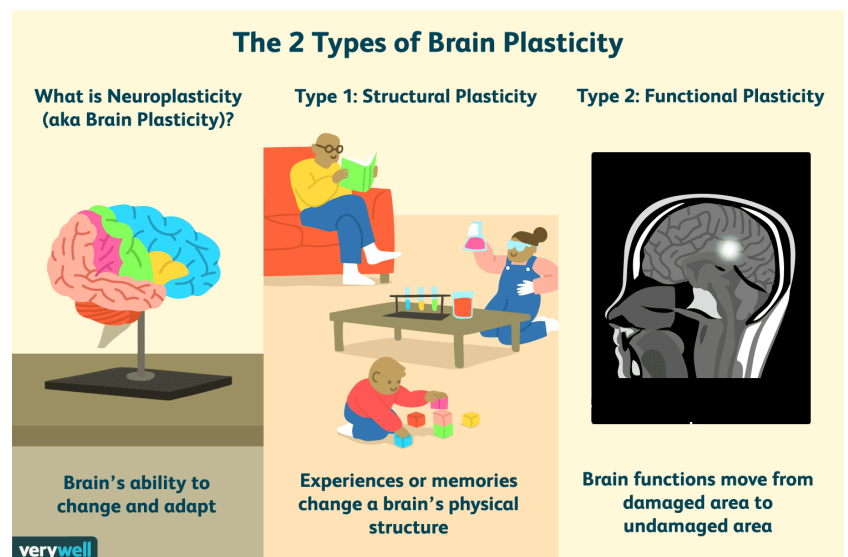


**“...Though you were slaves of sin, yet you obeyed from the heart that form of doctrine to which you were delivered. And having been set free from sin, you became slaves of righteousness.”
Romans 6:17,18**

“Slaves of righteousness” refers to learning and practicing Christian principles until they become second nature (an addiction):

Your “inward man” is your brain (heart, soul, mind):

**“Therefore we do not lose heart. Even though our outward man is perishing, yet the inward man is being renewed day by day.”
2 Corinthians 4:16**



The World's Battle For Your Eyeballs



On the **Netflix** documentary, **The Social Dilemma**, former Facebook, Pinterest, Google, and YouTube engineers explained how they used Persuasive Technology (brain science) to hijack the dopamine pathways of billions of social media users!

Therefore, it is important for all of us to understand the strategies they use to tempt and trick us!

“Never before in history have 50 designers, 20 to 35 year old, white guys in California, made decisions that would have an impact on two billion people.

**Impact Of
Social Media
On
Students**



Two billion people will have thoughts that they didn't intend to have, because of Google, Facebook, SnapChat, etc.”

(The Social Dilemma)

Understanding Scriptures about your heart, soul and mind will help you have a strong relationship with God. Learning brain science about your dopamine pathway and the efficiency of your brain will help you understand Scriptures about your mind.



**“Keep your heart with all diligence,
for out of it spring the issues of life.” Proverbs 4:23**

**“Look carefully then how you walk, not as unwise
but as wise, making the best use of the time,
because the days are evil. Therefore do
not be foolish, but understand what the
will of the Lord is.” Ephesians 5:15-17**

**“Be sober, be vigilant; because
your adversary the devil walks
about like a roaring lion,
seeking whom he may
devour.” 1 Peter 5:8,9**

**Impact Of
Social Media
On
Students**





There are only two industries that describe their customers as **USERS**: The illegal drug trade and the social media industry! Our attention is being sold to social media advertisers.



A magician understands some part of our mind that we're not aware of. This is what makes the illusion work. Doctors, lawyers, people who know how to build 747s or nuclear missiles, don't know how their own minds are vulnerable to social media.

This is a separate discipline and it's a discipline that applies to all human beings. From that perspective, you can have a very different understanding of what technology is doing.

The Social Dilemma on Netflix



“You therefore, beloved, since you know this beforehand, beware lest you also fall from your own steadfastness, being led away with the error of the wicked.” 2 Peter 3:17



The devil is using the same strategy today that he used to hijack Adam & Eve's dopamine pathway:

**“But I am afraid that as the serpent deceived Eve by his cunning, your thoughts will be led astray from a sincere and pure devotion to Christ.”
2 Corinthians 11:3**

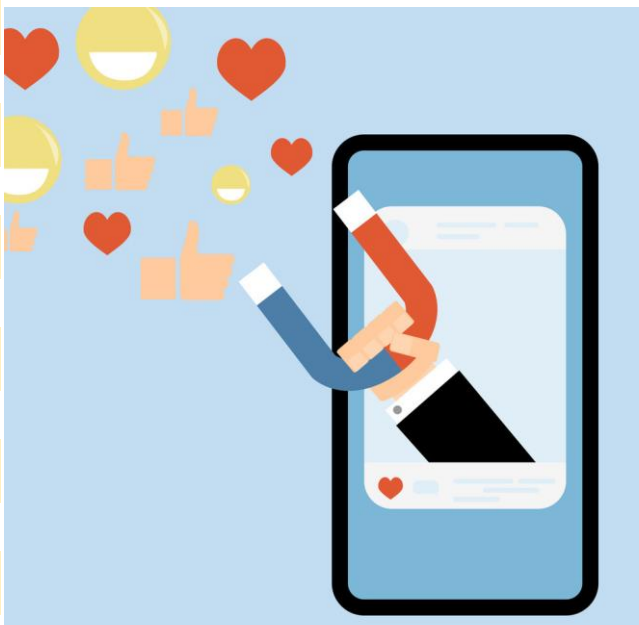
“Put on the whole armor of God, that you may be able to stand against the wiles of the devil.” Ephesians 6:11

The World's Battle For Your Eyeballs 14.



Every time you see your phone on the counter and just look at it, you know, if you reach over, it just might have something for you. That's not by accident. That's a design technique.

The Social Dilemma on Netflix



We feel good about ourselves because we get rewarded (releases of dopamine) activated by Facebook Hearts, Likes and Thumbs Up. Then, this technology forces us into this vicious cycle where we think, “what's the next thing I need to do for that reward (dopamine).”

The Social Dilemma on Netflix

The World's Battle For Your Eyeballs 14.



“All things are lawful for me, but not all things are helpful. All things are lawful for me, but I will not be enslaved by anything.” 1 Corinthians 6:12 (ESV)

We should be careful not to lust at immodestly dressed women:

“I have made a covenant with my eyes; Why then should I look upon a young woman?” Job 31:1

Women should be careful to dress modestly:

**“But I say to you that whoever looks at a woman to lust for her has already committed adultery with her in his heart.”
Matthew 5:28**

Deuteronomy 32:46 (NKJV)

⁴⁶ and He said to them: "Set your **hearts** on all the words which I testify among you today, which you shall command your children to be careful to observe--all the words of this law.

Mark 2:6 (NKJV)

⁶ And some of the scribes were sitting there and **reasoning** in their **hearts**,

Colossians 3:15 (NKJV)

¹⁵ And let the peace of God **rule** in your **hearts**, to which also you were called in one body; and be thankful.

James 4:8 (NKJV)

⁸ Draw near to God and He will draw near to you. **Cleanse** *your* hands, *you* sinners; and **purify** *your* **hearts**, *you* double-minded.

1 Peter 3:15 (NKJV)

¹⁵ But **sanctify** the Lord God in your **hearts**, and always *be* ready to *give* a defense to everyone who asks you a reason for the hope that is in you, with meekness and fear;

Video Clips for Further Study

Church of Christ member Dr. Brad Harrub is a neuroscientist. Dr. Harrub visited the Project Rescue campus to conduct a 5 hour seminar on the Bible and brain science. Here is a list of brief video clips from his presentation:

Communication Between Brain Regions - <https://www.projectrescue.org/communication> Ventral Tegmental Area - <https://www.projectrescue.org/vta>

Amygdala - <https://www.projectrescue.org/amygdala>

Hippocampus - <https://www.projectrescue.org/hippocampus>

Hypothalamus - <https://www.projectrescue.org/hypothalamus>

Nucleus Accumbens - <https://www.projectrescue.org/nucleus-accumbens>

Prefrontal Cortex - <https://www.projectrescue.org/prefrontal-cortex>

Drugs as Opposed to Senses Activating Reward System - <https://www.projectrescue.org/drugs>

Nicotine's Direct Attack on Reward System - <https://www.projectrescue.org/nicotine>

Activation Reward System Microscopic View - <https://www.projectrescue.org/activation>

Cocaine Activating Reward Circuit - <https://www.projectrescue.org/cocaine>

How Marijuana Hacks Reward System - <https://www.projectrescue.org/marijuana>

Many Things Play Role in Addiction - <https://www.projectrescue.org/addiction>

Reward Pathway Activates Motivation/Mesolimbic Pathway - <https://www.projectrescue.org/mesolimbic-pathway>

Reward Pathway Recovery Process - <https://www.projectrescue.org/reward>

Reward Pathway Stores Memory/Mesolimbic Pathway - <https://www.projectrescue.org/reward2>

Reward Pathway to Prefrontal Mesocorticle - <https://www.projectrescue.org/reward3>

Thinking, Feeling, & Behaving Shapes Brain Anatomy - <https://www.projectrescue.org/thinking>

Why Preteens/Teenagers Must Know Neuroscience - <https://www.projectrescue.org/why>

Your Experience Shapes Brain Structure - <https://www.projectrescue.org/experience>

Brain Recovery, Healing, & Rewiring Plasticity - <https://www.projectrescue.org/brain>

How The Brain Adjusts to Damage - <https://www.projectrescue.org/how>

How the Reward System Works When Pornography is Used - <https://www.projectrescue.org/pornography>

How Pornography Works Differently from Drugs in the Reward System -

<https://www.projectrescue.org/pornography2>

Dr. Harrub also serves the Lord through www.focuspress.org

Church of Christ member Dr. Tiffany Rogers teaches university level neuroscience. Upon request, Dr. Rogers video taped a 6th grade level presentation on brain science. Below are some brief video clips from her presentation:

Dr. Tiffany Explains Dopamine Activation - <https://www.projectrescue.org/dopamine>

Dr. Tiffany Describes Mesolimbic Pathway - <https://www.projectrescue.org/describes>

Dr. Tiffany Describes the Neuron - <https://www.projectrescue.org/neuron>

Dr. Tiffany Explains How Reward System Is Hijacked - <https://www.projectrescue.org/hijacked>

If you are interested in some additional video clips on neuroscience, please email Ronnie at ronniecrock1@gmail.com