Pain: 62 - 67mg
Anxiety: 60 - 65mg
Insomnia: 7 - 13mg

CBD

*REFER TO PAGE 1 OF ATTACHED REPORT

Pain: 4 - 7mg
Anxiety: .7 - 1.5mg
Insomnia: 0.1 - 0.5mg

THC

*REFER TO PAGE 1 OF ATTACHED REPORT

METHODS

We suggest a method that allows for precise dosage:

Oil
Tinctures
Edibles
Cartridges

Always consult a medical professional to determine your recommended method of dosage.

LOCATIONS

We recommend the following locations to facilitate your needs:

For high quality CBD products

For local dispensaries

Always consult a medical professional to determine if medical grade CBD and THC are appropriate for you.

DISCLAIMER

GreenWayDNA is providing recommendations based upon your genetics, as such you still must consult a medical professional. A multitude of factors beyond our test shape your health and the impact of CBD, THC, and Cannabis. Always consult a medical professional to determine if CBD and THC are appropriate for you. Consult a medical professional to determine your recommended method of dosage as well.

Sample

ACCOUNT NUMBER

GREENWAYDNA™

Pain: 62 - 67mg

Anxiety: 60 - 65mg

Insomnia: 7 - 13mg

CBD

Pain: 4 - 7mg

Anxiety: .7 - 1.5mg

Insomnia: 0.1 - 0.5mg

THC

*REFER TO PAGE 1 OF ATTACHED REPORT

8
variant(s)

GENETIC VARIATIONS

CRN1 (rs1049353 C/C)

CNR1 Variant: This variant decreases the responsiveness to cannabis-based products including CBD and THC, particularly in those suffering from anxiety and chronic pain.

CRN1 (rs806368 -rs806871 T/T/T/T)

CNR1 Variant: This variant has been associated with reduced responsiveness to cannabis-based products including THC.

GABRA2 (rs279826-rs279858-rs279871 A/T/T)

GABRA2 Variant: This variant has been shown to be associated with an increased susceptibility for some level of substance dependence with a variety of compounds including THC.

HTR1A (rs6295 C/G)

HTR1A Variant: This variant increases the receptor activity and may increase the risk of anxiety or depression while decreasing the responsiveness to cannabis-based products including CBD.

GENETIC VARIATIONS

TRPV1 (rs8065080 C/C)

TRPV1 Variant: This variant is a receptor variant that has been shown to decrease sensitivity to pain which may be modulated by lower doses of cannabis-based products including CBD and/or THC.

CYP2C9 (rs28371674 C/T)

CYP2C9 Variant: This variant is associated with a decrease in metabolizing certain pharmaceutical compounds as well as THC, leading to an increase persistence of THC in the body.

MGLL (rs604300 G/G)

MGLL Variant: This is a variant associated with increased responsiveness to THC and susceptibility to some level of substance dependence with a variety of compounds including THC.

PTGS2 (rs20417 C/G)

PTGS2 Variant: This is a variant of an enzyme that may alter pain perception and increase responsiveness to THC, potentially leading to heightened cognitive effects of THC.

Intentionally Blank

GREENWAY DNA

TEST RESULTS: CUST: Sample

Dear Member, Sample:

Welcome to your GreenWayReport™ Profile report! We are excited that you are participating with us to better understand how you can harness the natural medicinal power of cannabis.

Our goal is to empower you with knowledge about how your body may react to various cannabis compounds based on your unique genetic make-up so that you can accelerate your path to wellness with greater confidence and efficiency.

We have broken the information into 2 separate reports. This high level report and if you desire more detailed information on the science or the results please refer to the Level 2 report that accompanied this message to you.

This report is intended to provide you with an overview of your unique DNA profile as it relates to the absorption of, and reaction to, specific cannabinoid compounds. Further, it will provide you with guidelines to consider on the dosage of the two main components CBD and THC (i.e. CBD:THC) that will best help you address certain conditions.

Currently, GreenWay DNA is testing for the conditions of Pain/Chronic Pain, Anxiety and Insomnia/Sleep Disorders. The science related to medicinal uses of cannabinoids is emerging and developing quickly. We are monitoring these developments closely, the goal of which is to provide you, along with other members, with new data and information for additional conditions.

Please note, GreenWay DNA is strictly reporting on specific DNA variants and how those impact cannabinoid uptake, absorption and processing. The results are intended to provide you with your personal genetic information that will allow you to better understand your potential interaction with cannabinoids, and a general "recipe" of which compounds will help you address the above-mentioned conditions. GreenWay DNA presents your personal information in 3 parts:

- **Ratio (CBD:THC) –** This data point establishes the ratio of CBD to THC that is likely optimal for your body based on your genetic makeup;
- **Dosage –** This data point establishes what dosage you should be taking of the above ratio**;**
- **Mode of Delivery –** There are many modes of delivery for cannabinoid products due to the numerous forms that in which cannabis can take-on. Please refer to your online resources from GreenWayDNA with options that are considered the most efficient. Naturally, it is often the case that the choice is yours to make based on your lifestyle preference and what the market has to offer.

The Report -- **A Deeper Dive:**

Below we provide to you, our GreenWay DNA Member, with a high-level summary of what your genetics told us about you and your relationship with cannabinoids, particularly as it pertains to the condition(s) for which you are seeking treatment or relief. Much of the science related to medicinal uses of cannabinoids and the interaction of cannabinoids with human biology is new and rapidly developing. As such, this report flows from a high-level summary of your test results to a more granular look at the science which results from the hard work of many in the scientific community seeking to gain greater insights and factual data about cannabinoids' relationship with the human body.

The following sections of this report will allow you to have a more in depth look into these findings. This is not easy material to grasp at first glance, but we here at GreenWay DNA will do our best to provide you with the tools necessary to increase your understanding of your results and improve your path to wellness. In furtherance of this effort, we encourage you scout around the GreenWay DNA website as we will work to bring new science to you and keep you informed and current!

YOUR GREENWAY DNA PROFILE

SUMMARY OF YOUR GENETIC TESTS

We are focused on how you your body reacts to the prominent cannabinoid compounds in cannabis, CBD and THC. As such, we specifically test various RECEPTOR, SIGNALING and METABOLIC ENZYME genes and variants.

Our genetic tests identified five (5) variants in receptor/transporter genes, and three (3) variants in metabolic enzymes, which have altered or reduced activity that may lead to lower tolerance for, and poor metabolism of, THC, and an increased risk of substance abuse disorders as well as increased risk of pain, anxiety and/or depression, as well as sleep disorders. Therefore, we recommend reducing the overall dosage of THC and increased overall dosage of CBD using cannabis or cannabis-derived products with substantially reduced THC or no THC for the treatment of your pain, anxiety/depression, or insomnia conditions. Please refer to the recommendation sections of the GreenWay Report™ for more details.

Your high-level results are as follows:

PAIN

Ratio: Your genetic makeup suggests a CBD:THC ratio of **13:1 or higher**.

***Dosage*:** With regard to your dose protocol, we highly recommend that you speak with your physician and work closely with them. The following information, however, can be the subject of that discussion:

Considering your need to address **Pain**, a mid-range dose protocol should be considered. A Mid-Range protocol is 10mg to 100mg of CBD per day. Specifically, with your weight profile of between **125 lbs.** and **175 lbs.,** and assuming you are taking one dose per day, you should consider starting with **65.8 mg of CBD 4and 5.1 mg of THC** per day. Naturally, if you are taking two doses per day, you would take half of the above dose in each instance. Three doses per day, then you take one-third and so on.

ANXIETY

Ratio: Your genetic makeup suggests a CBD:THC ratio of **53:1 or higher.**

***Dosage*:** With regard to your dose protocol, we highly recommend that you speak with your physician and work closely with them. The following information, however, can be the subject of that discussion:

Considering your need to address **Anxiety**, a low-range dose protocol should be considered. A Mid-Range protocol is 10mg to 100mg of CBD per day. Specifically, with your weight profile of between **125 lbs.** and **175 lbs.,** assuming you are taking one dose per day, you should consider starting with **63.9 mg of CBD and 1.2 mg of THC** per day. Naturally, if you are taking two doses per day, you would take half of the above dose in each instance. Three doses per day, then you take one-third and so on.

INSOMNIA

Ratio: Your genetic makeup suggests a CBD:THC ratio of **43:1 or higher.**

***Dosage*:** With regard to your dose protocol, we highly recommend that you speak with your physician and work closely with them. The following information, however, can be the subject of that discussion:

Considering your need to address **Insomnia**, a Low-Range dose protocol should be considered. A Low-Range protocol is .05mg to 20mg of CBD per day. Specifically, with your weight profile of between **125 lbs.** and **175 lbs.,** assuming you are taking one dose per day, you should consider starting with **10.7 mg of CBD and 0.2 mg of THC** per day. Naturally, if you are taking two doses per day, you would take half of the above dose in each instance. Three doses per day, then you take one-third and so on.

A Quick Review of The Science Behind Your Report

It isn't surprising to learn that individuals have different reactions to various cannabis compounds when you realize how big of a role our own DNA plays in how we perceive, process and respond to the active natural compounds produced by cannabis. All humans have an endocannabinoid system, which is a system of cellular receptors and processing proteins for metabolizing compounds we naturally produce. Those compounds basically signal our nervous system and other organs to become more active, less active or to change our response to certain stimulus.

Cannabis plants make "phytocannabinoids" ("phyto" meaning plant) that mimic, to a certain degree, our own natural endocannabinoids. As a result, these are processed through the same endocannabinoid system of receptors, processing proteins and signaling systems in our bodies to cause a response within us.

Of the several endocannabinoid receptors humans possess, the most well-known are the CB1 and CB2 receptors. These receptors impact how we react to the various phytocannabinoids from cannabis. Actually, we all have dozens of genes that determine how we absorb and process phytocannabinoids from cannabis, however these genes vary in every individual, so some people will process cannabinoids like CBD or THC faster or with more response than others, and some people may have no discernable reactions to CBD or THC.

Every individual has at least 12 primary response genes that are specifically related to how we react to different cannabinoid compounds, regardless of medical conditions for which cannabinoid use is being considered. Everyone is different in the details of their genetic makeup, and those differences are referred to as "genetic variations". One of the most common types of genetic variations are "Single Nucleotide Polymorphisms", or SNPs, which are single DNA code changes that naturally exist in humans and are passed on from parent to child. When such SNPs occur within genes, they can alter the function, or expression of those genes, causing its activity to increase or decrease, much like brightening or dimming the lights in a room. There are 24 SNP's known to be associated with the response to cannabinoids.

In addition to the 12 primary response genes and 24 known SNPs mentioned above, other genes (and SNPs) may influence whether and how certain conditions response. These additional genes and their relevant conditions we tested are:

Insomnia:	at least 2 additional genes and 6 known SNPs
Anxiety:	at least 5 additional genes and 5 known SNPs
Pain:	at least 2 additional genes and 3 known SNPs

Given that there are many genes involved in the perception, communication and processing of the cellular information of cannabinoids, it is likely that each individual has one or more genetic variants in the genes that control responsiveness to cannabinoids.

Analyzing these genes and SNPs along the entire pathway from compound perception to cellular signaling and cellular metabolism is the only way to get to your unique Cannabis Compound Profile. This is what GreenWay DNA does for you.

The Details of the Genetic Variants in Your DNA:

Your response to cannabis treatment may be affected by your genetic makeup, particularly variants in genes that are involved in the action, metabolism and transport of these cannabinoids in your body. The transport and action genes include transporter, receptor and signaling genes. The metabolism genes include the enzymes involving cannabinoid production, activation and degradation. Each of these genes makes ("encodes") a unique protein that plays an important role in your individual and unique response to cannabinoid compounds.

One of the most common types of genetic variation are Single Nucleotide Polymorphisms (SNPs). SNPs in transporter or receptor genes may impact how these proteins attach to specific cannabinoids which affects reactions such as the susceptibility to withdrawal or increases in certain cravings. Certain variants can lead to modified enzyme activity, which can influence how your body metabolizes certain cannabinoids. Thus, your genetic makeup, along with your medical and physical condition(s), can provide a personal guideline for the appropriate CBD:THC ratio and dosage for you.

OUR TEST REVEALS THAT YOU HAVE THE FOLLOWING VARIANTS:

You have **5 variant detected** in one or more cannabinoid ***TRANSPORTER or RECEPTOR*** genes

You have **0 variant detected** in one or more cannabinoid ***SIGNALING*** genes

You have **3 variants detected** in one or more cannabinoid ***METABOLIC ENZYME*** genes

TRANSPORTER AND RECEPTOR GENES

Transporters and receptors are proteins that transport and receive chemical signals from outside of the cell. When a chemical signal is recognized by its corresponding receptor, it causes some form of cellular and tissue response. Of the 23 variants from the 9 transporter and receptor genes we tested:

YOU HAVE FIVE (5) VARIANTS DETECTED

CB1 (Cannabinoid receptor, Type 1) Gene Variants

General Description:

The CB1 protein is encoded by the CNR1 gene and is expressed in the brain and central nervous system. Cannabis, particularly THC, activates CB1 directly to stimulate the appetite, to relieve nausea and pain, and to have sedative effects. Some CB1 variants have been shown to be associated with cannabis dependence, antidepressant treatment response, as well as increased risk of anxiety **(for more information please see references, including Hryhorowicz S. et al 2018)**. CB1 receptors help to maintain homeostasis (i.e. balance) of neural networks. When this balance is disrupted, changes in mood and behavior follow. For example, preclinical studies have shown that genetically deleting CB1 receptors in mice resulted in depressive-like behavior.

We have tested for SIX (6) variants in the CB1 gene, and you have one (1) variant. The technical description of this variant is: a haplotype block of c.*3475A>G (rs806368) and c.-1370A>C (rs806371) (For more information please see reference: Zajkowska et al., 2014)." To "We have tested for SIX (6) variants in the CB1 gene, and you have two (2) variants. The technical description of this variant 1 is: a haplotype block of c.*3475A>G (rs806368) and c.-1370A>C (rs806371) (For more information please see reference: Zajkowska et al., 2014).
We have tested for SIX (6) variants in the CB1 gene, and you have one (1) variant. The technical description of this variant is: c.1260G>A or NC_000006.12:g.88143916C>T(rs1049353) (For more information please see references: Hryhorowicz S et al 2018; Mitjans M, et al 2013; and Zajkowska et al., 2014)" to "The technical description of variant 2 is: c.1260G>A or NC_000006.12:g.88143916C>T(rs1049353) (For more information please see references: Hryhorowicz S et al 2018; Mitjans M, et al 2013; and Zajkowska et al., 2014).

GABRA2 (Gamma aminobutyric acid (GABA) receptors) Gene Variants

General Description:

GABA is the major inhibitory neurotransmitter in the mammalian brain. The GABRA2 is a gene that encodes a particular type of receptor molecule that is part of a system that affects the function of a

number of important pharmacologic agents including barbiturates, benzodiazepines, and ethanol. (For more information please see references including: **Hryhorowicz S. et al 2018** and **Agrawal A. et al 2006**).

We have tested three (3) variants in the GABRA2 gene, and you have one (1) variant. The technical description of this variant is: c.255+423T>C (rs279826), c.396A>G (rs279858), c.704-104A>G(rs279871)

- Your variant genotype may lead to increased risk of alcohol and THC dependence and thus avoiding high doses of THC (and for some conditions having very low or no THC) is likely to be of benefit to you in your search for relief from the conditions considered in your GreenWay Report™.

HTR1A (5 Hydroxytryptamine (Serotonin) 5HT-1A Receptor)

General Description:

HTR1A, also known as a serotonin receptor, is found in the central and peripheral nervous systems. Antidepressants (ADs) work by inhibiting this receptor, leading to a buildup of serotonin and faster anti-depressant action. The anti-anxiety properties of CBD (in different animal models) are also at least in part mediated by these receptors. Accordingly, CBD reduced the effect of the acute responses to stress by inhibiting these receptors. (For more information please see references: **Baune BT et al., 2008; Albert PR, 2012; Holst SC et al., 2015; and Ligresti A et al., 2016**).

We have tested and detected one (1) variant. **The technical description of this variant is:** c.-1019C>G (rs6295)

- Your variant genotype C/G was associated with an increase in activity of the 5-HT1A receptor. This variant can lead to an increased risk of anxiety and depression and a poor response to anti-depressant treatment. Given that CBD reduces the acute responses related to stress through 5-HT1A, it is likely that an increased dosage of CBD will be more effective in the treatment of certain conditions such as anxiety.

TRPV1 (Transient Receptor Potential Cation channel Subfamily V Member 1)

General Description:

TRPV1, also known as the “capsaicin receptor” and the “vanilloid receptor 1”, is a protein that, in humans, is encoded by the TRPV1 gene. TRPV1s are sensitive to heat, capsaicin, pungent chemicals and other noxious stimuli. They play an important role in the pain pathway where in concert with pro-inflammatory factors. CBD may activate and desensitize the TRPV1 gene to help manage and

modularize anxiety and pain. It can, thus, impact patients with neuropathic pain syndrome(s) (See references: **Hryhorowicz S et al 2017; Buttari F et al 2017; and Forstenpointner J et al 2017**).

We have tested two (2) variants in TRPV1 gene, and you have one (1) variant, **and you have one (1) variant**. **The technical description of this variant is:** : - Ile585Val (c.1911A>G, rs8065080) (see reference: Buttari F. et al 2017)" to "We have tested two (2) variants in TRPV1 gene, and you have one (1) variant. The technical description of this variant is: - Ile585Val (c.1911A>G, rs8065080) (see reference: Buttari F. et al 2017).

SIGNALING GENES

Signaling proteins acts as switches to mediate cell and tissue responses. These switches are triggered in response to chemical signals interacting with receptor proteins. Of the 3 variants from the 3 signaling genes we tested:

YOU HAVE ZERO (0) VARIANT DETECTED IN THE SIGNALING GENES TESTED

METABOLIC ENZYME GENES

Metabolic enzymes are proteins which build, modify, or degrade chemical compounds such as cannabinoids. Metabolic enzymes can increase or decrease the activity of compounds within cells and tissues. Of the 12 variants from the 7 metabolic enzyme genes we tested:

YOU HAVE THREE (3) VARIANTS DETECTED

CYP2C9 Gene Variant

General Description:

CYP2C9 is a clinically important enzyme that metabolizes a wide variety of drugs, including common over-the-counter medicines such as ibuprofen, the anticonvulsant mephenytoin, anti-ulcer drugs such as omeprazole, certain antidepressants, and THC. CYP2C9 plays a major role in the primary metabolism of THC, and "poor metabolizer" variants of CYP2C9 will cause increased persistence of THC in the blood stream. Such poor metabolizer variants in the CYP2C9 gene can cause poor metabolism of all of these target drugs. (For more information please see references: **Ko TM et al 2013,** and **Stout SM and Cimino NM 2014**).

We have tested two (2) variants from CYP2C9 gene, and you have one (1) variant. **The technical description of this variant is:** CYP2C9*2, c.430C>T (rs28371674 or rs1799853)

- You have variant genotype C/T which is a rather weak metabolizer, having shown about a 20% reduction in the metabolism of many drugs, including THC. This can result in an increase persistence of THC in your system. As such, you should consider cannabis products with low or no THC when looking for cannabinoid relief from the conditions reviewed in your GreenWay Report™.

MGLL Gene Variant

General Description:

The monoglyceride lipase (MGL) enzyme encoded by the MAGL gene is part of the endocannabinoid pathway, responsible for the inactivation of endogenous cannabinoids. Regulatory variants of this gene associate with extreme obesity and affect the body's metabolism (Please see references: **Hryhorowicz S et al 2018** and **Carey CE, et al 2015**).

We have tested and detected one (1) variant: c.263-1443T>C (rs604300)

- You have variant genotype G/G which may have a susceptibility to develop or risk of developing some level of substance use disorder as compared to people who do not have this variant. As such, you should consider using products that have low or no THC when choosing cannabis products for or using cannabinoids as a means of relief of the conditions covered in your GreenWay Report™.

PTGS2 Gene Variant

General Description:

The cyclooxygenase-2 gene (PTGS2 or COX-2, OMIM: 600262), encodes prostaglandin-endoperoxide synthase (PTGS; EC 1.14.99.1). This enzyme regulates the conversion of certain polyunsaturated fats into compounds shown to have hormone-like effects. The PTGS2 gene can influence the degradative pathway of endocannabinoids. It regulates the gene that encodes the CB1 receptor and modulates CB1 signaling within nerve cells. THC increases expression and activity of this gene. On the other hand, the major psychoactive and side-effects of repeated THC exposure can be reduced by pharmacological or genetic inhibition of PTGS2. In addition, this gene is associated with biologic events such as responses to injury, inflammation, and proliferation of cells. (For more information please see references: **Gałecki P et al, 2010; Chen R et al 2013; and Hryhorowicz S. et al 2018**).

We have tested and detected one (1) variant. **The technical description of this variant is:** c.-137-762C>G (rs20417)

- You have variant genotype C/G which has elevated PTGS2 gene expression and may lead to enhanced neuropsychiatric and cognitive side effects of THC exposure compared to people who do not

have this variant. Thus, you should consider cannabis products with low or no THC when looking for cannabinoid relief from the conditions reviewed in your GreenWay Report™.