

SCIENTS

NUMBER 21: REMISSION (PART 2: LABS AND INTESTINAL HEALING)

YOUR DOC WANTS YOU TO FEEL GREAT BUT THERE IS ANOTHER PART TO BEING COMPLETELY IN REMISSION AND THAT IS MAKING SURE YOUR LABORATORY TUDIES ARE NORMAL AND THAT YOUR GUT HAS COMPLETELY HEALED! THEN YOU'RE LIKELY TO SAY:

"SEE, DOC, TOLD YOU SO!"



BUT, WHEN YOUR IN REMISSION AND SUDDENLY, ALL YOUR SYMPTOMS COME BACK. THEN YOU'RE LIKELY TO SAY:

"DARM."

THEN ADD:

"DOC, LET'S TALK, WHAT ARE WE GOING TO DO TO MAKE SURE I DON'T RELAPSE!"



AS SHAKESPEARE WOULD SAY, "A POOP BY ANY OTHER NAME WOULD SMELL AS STINKY." IN ANY WORDS, CALL IT ANY WAY YOU WANT: FECES, KAKA, DOO-DOO, DUNG, EXCREMENT, EXCRETA, ORDURE, BODY WASTE AND THE BEST, BROWN-REALLY-YUCKY-STUFF-THAT-CAME-OUT-OF-ME.

"DOC, YOU OUGHT TO SEE THE STUFF THAT'S COMING OUT OF ME, ALTHOUGH, I WOULDN'T SUGGEST SMELLING IT!"

STRAIN AND TENSION
AND OVERWHELMING
PRESSURE OFTEN THE
RESULT OF A DIFFICULT
SITUATION.

NUMBER 24

STOOL

8

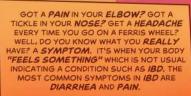
"DOC, I FELT LOUSY. LIKE
I HAD A HEAVY LOAD ON MY
SHOULDERS AND JUST
COULDN'T MOVE. SO I
TALKED ABOUT HOW I FELT
TO MY PARENTS AND I
LEARNED SOMETHING VERY
INTERESTING. THAT IF
THINGS SEEM HARD AND
HELPLESS THERE ARE
ALWAYS PEOPLE WHO CAN
HELP ME OUT...YOU HAD
MENTIONED THAT MANY OF
YOUR PATIENTS SEE A
PSYCHOLOGIST TO HELP
THEM TO NOT FEEL
CRUMMY...I WOULD LIKE
TO SEE ONE. I AM READY
TO FEEL GOOD AGAIN."

NUMBER 25: STRESS



NUMBER 27: SYMPTOMS

IN THE **GI TRACT** WHICH MAKES YOU VOMIT GREEN! **EWWWW!** I DEFINITELY DON'T WANT THAT!"



"DOC, I GOT PAIN IN MY STOMACH, STINKY DIARRHEA AND I'M LOSING WEIGHT, HOW WILL YOU GET RID OF MY SYMPTOMS?" NUMBER 28: ULCER

IF YOU LOOK AT YOUR
BODY AND THERE IS, LO AND
BEHOLD, AN OPEN SORE OR,
IF YOU COULD LOOK INSIDE
OF YOUR BODY, AND COULD
SEE AN OPEN, FULL-OFMUCOUS SORE IN YOUR
ALREADY NOT-HAPPY
INTESTINES, YOU HAVE AN
ULCER, IT CAN CAUSE A LOT
OF PAIN. I MEAN, WAY MORE
THAN A SIMPLE, "OUCH,"
THE FIRST THING YOU GOTTA
DO IS GO STRAIGHT TO YOUR
GREAT DOCTOR AND SAY:

"OUCH, DOC, DO SOMETHING, PLEASE!"



YOU WANT TO KNOW
A MAJOR DIFFERENCE
BETWEEN A WORLD THAT HAS
VACCINES AND A WORLD, LIKE
A HUNDRED YEARS AGO, THAT
DOESN'T. LIVING. VACCINES
ARE MEDICINES TO HELP
PREVENT AN INFECTION FROM
OCCURRING. VACCINES
TRIGGER THE BODY TO TEACH
YOUR IMMUNE SYSTEM
HOW TO RECOGNIZE AND FIGHT
DISEASES LIKE POLIO,
DISEASES THAT CAN REALLY
DO A LOT OF HARM. HOORAY
FOR ANTIBODIES. THEREFORE,
HOORAY FOR VACCINES.

"DOC, ARE THERE SPECIFIC VACCINES THAT I NEED BECAUSE OF MY IBD?"



"GOTTA GO, GOTTA GO, GOTTA GO!" NO, NOT TO PARIS OR SINGAPORE OR ANTARCTICA. ONLY TO GO TO THE BATHROOM AND TRY AND TRY TO PASS STOOL, POOP, OR WHATEVER WE'RE CALLING IT NOW...BUT NOT HAVE ANYTHING COME OUT.

"DOC, A BIG QUESTION, WHY DID THEY HAVE TO GIVE THIS FEELING THAT I HAVE TO CONSTANTLY GO TO THE BATHROOM EVEN THOUGH THERE'S NOTHING THERE, THE NAME TENESMUS? WHY DIDN'T THEY JUST CALL IT FRUSTRATION! WHICH IS WHAT IT ACTUALLY IS!"



LOTS OF COMMUNICATION! SO, WHERE DO WE GO FROM HERE? FROM HERE #2:

FROM HERE #1:

COMMUNICATION! HOW ELSE IS YOUR HEALTHCARE TEAM GOING TO KNOW HOW WELL YOU'RE DOING!

WHO IS ON YOUR HEALTHCARE TEAM = VERY CARING PROFESSIONALS AND YOU AND YOUR FAMILY

WHAT DOES THIS TEAM HAVE TO DO TO MAKE SURE EVERYTHING IS GOING AS WELL AS POSSIBLE? TALKING AND HEARING WHAT EACH OTHER IS SAYING AND MORE IMPORTANTLY, UNDERSTANDING WHAT EACH OTHER IS SAYING AND MORE IMPORTANTLY, UNDERSTANDING WHAT EACH PERSON MEANS WHEN THEY SAY SOMETHING, THE MOST IMPORTANT WAY FOR YOUR HEAL THCARE TEAM TO KNOW HOW YOU ARE FEELING, HOW YOU ARE HANDLING IBD AND WHAT YOU WISH WERE BETTER, IS TO TELL THEM, HONESTLY AND OPENLY, AND, THAT'S TRUE EVEN WHEN YOU FEEL GREAT AND ARE DOING GREAT. BECAUSE YOUR TEAM WANTS TO MAKE SURE THAT WHEN EVERYTHING IS FINE, IT CONTINUES BEING FINE, AND WHEN IT'S NOT-SO-FINE, IT GETS BETTER. NEVER FORGET, YOU ARE THE MOST IMPORTANT PART OF THE TEAM. WITHOUT YOU, IT JUST DOESN'T WORK. BUT, WHEN YOU ALL WORK TOGETHER, YOU FEEL YOUR BEST. NO QUESTION ABOUT IT!

YOUR TEAM CAN BE MADE UP OF MANY DIFFERENT PEOPLE EACH WITH A DIFFERENT ROLE.

KNOW THE TESTS, ESPECIALLY THE ONES THAT LET YOUR DOCTOR KNOW HOW YOU'RE DOING

THERE ARE TESTS YOUR DOCTOR MAY DO TO MAKE SURE YOU ARE DOING WELL. THERE ARE MANY DIFFERENT TESTS AND NOT ALL TESTS ARE GIVEN TO ALL PATIENTS. THE MOST COMMON ARE SIMPLE BLOOD TESTS. SOME OF THESE HELP DETERMINE THE AMOUNT OF INFLAMMATION IN YOUR BODY

WHAT LABORATORY TESTS ARE DONE?

HEMOGLOBIN AND HEMATOCRIT:

THESE TESTS MEASURE RED BLOOD CELLS IN YOUR BLOOD.

WHY ARE THEY DONE?

RED BLOOD CELLS ARE ESSENTIAL TO HELP MOVE OXYGEN

THROUGH THE BODY, WHEN THE RED BLOOD COUNT IS TOO

"LOW" THIS RESULTS IN ANEMIA THAT CAUSES FATIGUE AND EXHAUSTION. THIS IS NOT UNCOMMON IN PEOPLE WITH ACTIVE IBD.

ALBUMIN LEVELS

ALBUMIN IS A PROTEIN, ITS PURPOSE IN YOUR BLOOD IS TO TRANSPORT OTHER MOLECULES THROUGHOUT THE BODY. WHEN IBD IS ACTIVE, THERE CAN BE A DECREASE IN ALBUMIN. WHY? BECAUSE ALBUMIN CAN LEAK INTO THE GASTROINTESTINAL TRACT AND GET LOST, AND BECAUSE THERE CAN BE A DECREASED PRODUCTION IN THE BODY

ERYTHROCYTE SEDIMENTATION RATE (ESR)

ERYTHROCYTE SEDIMENTATION RATE (ESR)

& C-REACTIVE PROTEIN (CRP)

BOTH OF THESE MEASURE INFLAMMATION IN THE BODY.

ESR MEASURES INFLAMMATION IN THE BODY. WHEN THERE IS

INFLAMMATION, THE BODY PRODUCES SEVERAL DIFFERENT

TYPES OF PROTEINS CALLED ACUTE PHASE REACTANTS.

THE ESR IS THE TIME AT WHICH RED BLOOD CELLS

(ERYTHROCYTES) FALL IN A SMALL TUBE, IF THERE ARE A LOT OF ACUTE

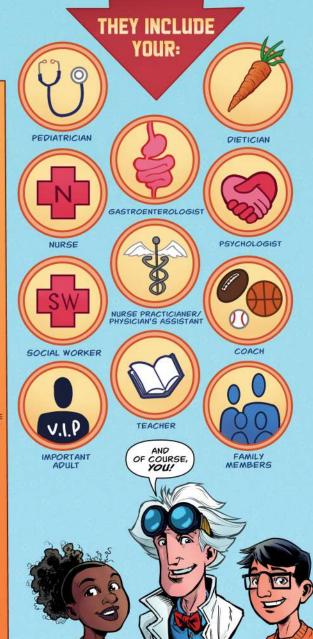
PHASE REACTANTS I.E. INFLAMMATORY PROTEINS IN THE BLOOD, IT TAKES MORE TIME FOR RED BLOOD CELLS TO FALL TO THE BOTTOM OF THE TUBE. MORE TIME MEANS HIGHER ESR. IF THERE IS NO INCREASE IN INFLAMMATORY PROTEINS, THE RED BLOOD CELLS FALL AT A NORMAL RATE, AND THE ESR IS NORMAL.

CRP IS ANOTHER MEASURE OF INFLAMMATION IN THE BODY.
CRP IS A SPECIFIC ACUTE PHASE REACTANT/PROTEIN
PRODUCED BY THE LIVER WHEN THERE IS INFLAMMATION IN THE BODY

IT IS IMPORTANT TO KNOW THAT ESR AND CRP ARE NOT SPECIFIC FOR *IBD*, THEY BOTH CAN BE ELEVATED IN OTHER *INFLAMMATORY* STATES INCLUDING INFECTIONS LIKE THE *COMMON COLD*.

STOOL CALPROTECTIN

CALPROTECTIN IS A PROTEIN FOUND IN INFLAMMATORY CELLS.
STOOL CALPROTECTIN IS VERY SIMILAR TO ESR AND CRP IN THAT
IT MEASURES INFLAMMATION, BUT UNLIKE ESR AND CRP, IT IS
SPECIFICALLY DESIGNED TO MEASURE INFLAMMATION IN THE
GASTROINTESTINAL TRACT. WHILE STOOL CALPROTECTIN LEVELS
DO NOT DIFFERENTIATE BETWEEN INTESTINAL INFECTION AND
INFLAMMATORY BOWEL DISEASE, THEY CAN BE USEFUL
IN TRACKING INEL AMMATION IN IRD. IN TRACKING INFLAMMATION IN IBD.





WHY SHOULD YOU KNOW ALL THIS?

FOR YOU! THE MORE YOU KNOW, THE MORE COMFORTABLE YOU WILL BE ABOUT ASKING QUESTIONS AND LISTENING TO THE ANSWERS AND THE BETTER YOU'LL BE IN MAKING DECISIONS. FOR GOOD MEASURE, IT WILL MAKE YOU AND YOUR HEALTHCARE PROVIDERS A REALLY GOOD TEAM! MAKING PERMANENT REMISSION A REALLTY.

WHICH, IN THE END, IS WHAT WE ALL WANT.

IBD THERAPIES

THE GOAL OF ANY THERAPY IN IBD IS TO MAKE SURE YOU ARE FEELING GREAT. THIS MEANS THAT YOU HAVE NO SYMPTOMS, ARE GROWING WELL AND THAT ALL YOUR TESTS THAT MEASURE INFLAMMATION ARE NORMAL. DIFFERENT THERAPIES EXIST TO HELP PATIENTS GO INTO REMISSION AND STAY IN REMISSION WITH IBD. SOME PEOPLE USE MEDICATIONS, SOME USE NUTRITION THERAPY, AND SOME USE BOTH MEDICATION AND NUTRITION. YOU AND YOUR DOCTOR WILL DECIDE ON WHAT TREATMENT IS BEST FOR YOU!

SOMETIMES YOUR DOC MAY WANT TO GET "RADIOLOGIC TESTS". THESE INCLUDE X-RAYS, BARIUM SWALLOWS, CT SCANS, MRIS. THESE ARE TESTS TO HELP LET YOUR DOCTORS SEE WHAT'S GOING ON INSIDE YOUR BODY. THEY ARE FAST, PAINLESS, AND ARE ABLE TO CREATE DETAILED IMAGES OF YOUR GUT, YOUR INTERNAL ORGANS, YOUR BONES, YOUR SOFT TISSUES AND YOUR BLOOD VESSELS. OTHER TIMES YOUR DOC MAY WANT TO PERFORM AN ENDOSCOPY AND COLONOSCOPY. ENDOSCOPY AND COLONOSCOPY. ENDOSCOPY AND COLONOSCOPY LET YOUR DOCTOR LOOK DIRECTLY INTO YOUR INTESTINES WITH A SPECIAL CAMERA ON THE END OF A LONG TUBE. THIS IS HOW A DIAGNOSIS OF IBD IS MADE AND HOW, AFTER TREATMENT, YOUR DOCTOR CAN MAKE SURE THINGS ARE GOING WELL. THEY ARE NOT COMMON TESTS AND ONLY DONE WHEN THEY ARE NEEDED. UNLIKE THE "RADIOLOGIC TESTS" PATIENTS ARE ASLEEP WHILE THEY'RE BEING DONE. PRETTY COOL, DON'T YOU THINK?

WHAT ELSE YOU SHOULD KNOW?
PEOPLE WITH IBD HAVE DIFFERENT SYMPTOMS.
EVERYBODY'S IBD IS UNIQUE, ALTHOUGH THERE ARE
SIMILARITIES, THERE ARE ALWAYS DIFFERENCES FOR
EACH PERSON, THIS IS BECAUSE PEOPLE'S INFLAMMATION
CAN BE LOCATED IN DIFFERENT AREAS OF THE
GASTROINTESTINAL TRACT, PATIENT'S CAN HAVE DIFFERENT
AMOUNTS OF INFLAMMATION AND DIFFERENT SENSITIVITIES
TO THAT INFLAMMATION. ALSO DIFFERENT PEOPLE CAN
RESPOND DIFFERENTLY TO TREATMENTS. THIS DOESN'T MEAN
WE CAN'T LEARN FROM EACH OTHER'S EXPERIENCES, WE
ABSOLUTELY CAN' BUT IT IS IMPORTANT TO REMEMBER
THAT ONE PERSON'S EXPERIENCE MAY BE VERY
DIFFERENT FROM ANOTHER'S!





THERE ARE MANY MEDICATIONS AVAILABLE TO TREAT IBD, THESE MEDICATIONS HELP DECREASE INFLAMMATION. THERE ARE MEDICATIONS THAT ARE FOCUSED FOR MILD DISEASE ACTIVITY SUCH AS MESALAMINES AND THERE ARE ONES FOR MORE ACTIVE DISEASE SUCH AS THE IMMUNOSUPPRESSIVE MEDICATIONS. THESE MEDICATIONS CAN WORK GREAT! WHEN DECIDING ON A MEDICATION THERAPY IN IBD, IT IS IMPORTANT TO UNDERSTAND THAT THERE ARE AL WAYS POTENTIAL SIDE EFFECTS, IN FACT, EVEN COMMON MEDICATIONS THAT WE ALL TAKE FOR THINGS LIKE HEADACHES HAVE SIDE EFFECTS ALTHOUGH THESE ARE USUALLY VERY RARE. ASK YOUR DOCTOR WHAT HE/SHE THINKS IS BEST FOR YOU AND WHY.

EXCLUSIVE ENTERAL NUTRITION (EEN) FORMULA AND DIET

FEN

NUTRITIONAL THERAPY IN THE FORM OF EEN WORKS EXTREMELY WELL TO TREAT ACTIVE CROHN'S DISEASE.

EXCLUSIVE ENTERAL NUTRITION INVOLVES A PATIENT DRINKING ONLY FORMULA (A SPECIFIC LIQUID DIET) FOR 8 TO 12 WEEKS
AND NO SOLID FOOD.

THIS FORMULA-BASED DIET HAS WONDERFUL PROMISE. IT WORKS EQUALLY AS WELL AS STEROIDS, A COMMONLY PRESCRIBED MEDICATION, WITH LESS SIDE EFFECTS, BETTER GROWTH AND BETTER HEALING IN THE GASTROINTESTINAL TRACT. WITH EEN, RELAPSE IS COMMON ONCE IT IS STOPPED UNLESS APPROPRIATE MEDICATION THERAPY OR A SPECIFICALLY PRESCRIBED ELIMINATION DIET IS BEGUN.

DIET

DIET IS AN IMPORTANT ISSUE IN IBD. THIS IS BECAUSE THE FOODS WE EAT AFFECT OUR FECAL MICROBIOME, THE BACTERIA IN OUR INTESTINES AS WELL AS THE INTESTINAL IMMUNE SYSTEM. SOME PEOPLE USE DIET TO TREAT THEIR IBD BY USING A SPECIFICALLY PRESCRIBED DIETARY THERAPY AND OTHER PEOPLE USE A HEALTHY DIET WITH MEDICATION TO MAKE SURE THEIR IBD IS UNDER CONTROL. CURRENT DIETS THAT APPEAR TO WORK FOR IBD ARE WHOLE FOODS DIETS THAT REMOVE FOODS BELIEVED TO INCREASE INFLAMMATION IN THE BODY. THIS INCLUDES GRAINS, MILK PRODUCTS OTHER THAN HARD CHEESES AND YOURT FERMENTED FOR 24 HOURS, AND SWEETENERS OTHER THAN HONEY. ALTHOUGH, DIETARY CHANGE CAN BE INITIALLY HARD, MANY PEOPLE ARE ABLE TO MAKE THIS TRANSITION AND DO GREAT! A LOT OF RESEARCH IS NOW BEING DONE TO LEARN MORE ABOUT HOW DIET WORKS AND HOW WE CAN MAKE DIETARY THERAPY EASIER, FOR MORE INFORMATION, SEE WWW.NIMBAL.ORG. JUST LIKE MEDICATIONS, THERE ARE PROS AND CONS TO DIET THERAPY.

OUTSIDE OF THE PRIMARY TREATMENTS FOR IBD, THERE ARE OTHER THINGS YOU CAN DO TO HELP YOUR IBD.



SLEEP HYGENE

SLEEP WHAT? SLEEP IS IMPORTANT FOR THE BODY, DURING SLEEP YOUR BODY RECOVERS FROM THE STRESS IT IS UNDER DURING THE DAY, SLEEP IS IMPORTANT FOR BOTH PHYSICAL AND MENTAL HEALTH, FOR TEENAGERS, WHO ACTUALLY NEED THE MOST SLEEP, 8-10 HOURS A DAY IS RECOMMENDED

DEAL WITH STRESS HEAD ON

EVERYONE HAS STRESS! WHETHER THE STRESS IS CAUSED BY SCHOOL, FRIENDS, FAMILY, IBD, OR SOMETHING ELSE, BY DEALING WITH IT, YOU CAN MAKE SURE YOU FEEL YOUR BEST. SOMETIMES IT CAN BE HARD TO KNOW HOW TO DEAL WITH YOUR STRESS AND THAT'S WHERE YOUR HEALTH CARE TEAM COMES IN. ASK THEM! THEY ARE LIKELY TO HAVE GOOD ADVICE AND GREAT TOOLS.



EXERCISE

EXERCISE HELPS THE BODY IN **SO MANY** WAYS, IT DOESN'T HAVE TO BE A **HUGE** AMOUNT OF RUNNING, BIKING, SWIMMING, KARATE, ETC. DO **WHATEVER** IT IS THAT YOU **LOVE** TO DO. IT DOESN'T HAVE TO BE AT AN EXTREMELY **HIGH INTENSITY** ALL THE TIME. BY USING YOUR **BODY** YOU CAN HELP YOUR **BODY** FEEL BETTER AND **HEAL**, REMEMBER, **WALKING** IS ALSO GOOD **EXERCISE!**



YOU'RE MORE THAN YOUR IBD

YOU ARE AN AMAZING HUMAN AND IBD IS ONLY A PART OF WHO YOU ARE AN AMAZING HUMAN AND IBD IS ONLY A PART OF WHO YOU ARE, IT IS IMPORTANT HOWEVER, TO KEEP UP WITH YOUR TREATMENT WHETHER IT! IS MEDICATION OR DIET. SOMETIMES PATIENTS FEEL SO GOOD THAT THEY THINK THEIR IBD IS GONE FOREVER AND STOP THEIR TREATMENT. UNFORTUNATELY, IBD USUALLY COMES BACK IF TREATMENT IS STOPPED AND SOMETIMES IT CAN BE HARDER TO TREAT WHEN IT DOES



SMARTI COM DEGUNG!

MEET AND JOIN YOUR COMMUNITY

THE CROHN'S AND COLITIS FOUNDATION SPONSORS AN AWESOME CAMP CALLED CAMP OASIS. IT IS A GREAT EXPERIENCE! YOU GET TO HANG OUT WITH KIDS WHO ARE SMART, CREATIVE, FUN, ENGAGING AND ALSO HAVE IBD, LIKE YOU!



THE PROFESSOR

PROFESSOR NIMBAL (NUTRITION IN MEDICINE BALANCED)
IS NO ORDINARY PROFESSOR. HE IS ON A MISSION TO EDUCATE KIDS
AND THEIR FAMILIES ABOUT THE AMAZING EFFECT DIET CAN HAVE
ON YOU AND YOUR FAMILY'S HEALTH.

PROFESSOR NIMBAL AND THIS COMIC BOOK WERE CREATED TO HELP OUR COMMUNITY HAVE A CLEARER UNDERSTANDING OF THE EDUCATION AND RESEARCH BEHIND USING DIETARY THERAPY AS MEDICINE AND WHY THIS TYPE OF INTERVENTION MIGHT BE THE RIGHT ONE FOR YOU AND YOUR FAMILY, PROFESSOR NIMBAL, JUST LIKE YOUR HEALTHCARE PROVIDERS, WANTS TO HELP YOU BECOME THE HEALTHIEST PERSON YOU CAN BE!

THE CREATOR AND WRITER

DAVID SUSKIND MD, IS A PEDIATRIC GASTROENTEROLOGIST AND PROFESSOR OF PEDIATRICS AT SEATTLE CHILDREN'S HOSPITAL AND UNIVERSITY OF WASHINGTON SCHOOL OF MEDICINE AND A CHILDHOOD FRIEND OF PROFESSOR NIMBAL.

ALTHOUGH HE DOESN'T GET TO TRAVEL AROUND IN A PEOPLE OPERATED OMNIVERSE PROJECTILE (P.O., O.P), HE DOES GET TO LEAD A NATIONAL EFFORT TO INTEGRATE NUTRITIONAL THERAPY INTO THE CLINICAL CARE FOR PATIENTS WITH INFLAMMATORY BOWEL DISEASE, AN EXPERT IN INTESTINAL DISEASES AND FIGHTING "BAO" BACTERIA, HE HAS FOCUSED MUCH OF HIS ENERGY INTO THE CLINICAL CARE OF PATIENTS WITH IBD AS WELL AS RESEARCH ON THE EFFECTS OF DIETARY THERAPY IN INFLAMMATORY BOWEL DISEASE. HE BELIEVES IN PATIENT AND FAMILY EMPOWERMENT THROUGH EDUCATION. AND HE BELIEVES IN YOU!





THE ARTIST

JASON PIPERBERG IS AN ILLUSTRATOR, COMIC ARTIST, AND STORYTELLER WHO HAS WORKED ON PROJECTS LIKE RAISING DION AND CHAMPIONS OF HARA AS WELL AS HIS OWN CREATOR OWNED COMIC, SPACEMAN AND BLOATER. HE'S ALSO PROFESSOR NIMBAL'S PERSONAL STYLIST.

IN 2012 JASON GRADUATED FROM THE UNIVERSITY OF THE ARTS IN PHILADELPHIA WITH A BFA IN ILLUSTRATION, AND HAS ALWAYS HAD A LOVE FOR ILLUSTRATION, COMICS, SUPER HEROES, SCI-FI, ROBOTS, AND ANYTHING RELATED TO NARRATIVE IMAGERY AND STORYTELLING.

HE CURRENTLY HAS HIS DREAM JOB WORKING AS A FREELANCE ILLUSTRATOR IN LANCASTER, PA.



