

"SMART HEALTH"

FEBRUARY 2008

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>> THE JOY MCCANN FOUNDATION THROUGH ITS GENEROUS ENDOWMENT FUND AT WEDU HAS PROVIDED FUNDING FOR THIS PROGRAM.

>> NEXT ON "SMART HEALTH."

A RADICAL TREATMENT FOR MIGRAINES THAT AIMS RIGHT FOR THE HEART.

HYPERBARIC HOPE, THE CURE FOR DIVERS WITH THE BENDS HAS SOME SURPRISING OTHER USES.

>> A REVOLUTIONARY DRUG TREATMENT PROGRAM FOR MOTHER AND CHILD.

AND MEET A YOUNG MAN WHO HAS LEARNED TO LIVE LIFE TO THE FULLEST AS HE'S TEACHING THE REST OF US.

"SMART HEALTH" STARTS RIGHT NOW.

>> STRUGGLES WITH OUR HEALTH.

IT SEEMS WE ALL HAVE THEM IN ONE FORM OR ANOTHER.

HOW WE COPE AND HOW WE OVERCOME, THAT'S THE REAL STORY.

UNEDITED REALTIME CLOSED CAPTIONING

HELLO AND WELCOME TO "SMART HEALTH."

I'M ANGIE MORESCHI.

WHAT HEALTH CHALLENGES ARE YOU FACED WITH?

SOME PEOPLE STRUGGLE WITH MIGRAINES.

OTHERS BATTLE WITH DRUG ADDICTION OR DEBILITATING DISEASE.

THE PATH TO WELLNESS IS SOMETIMES A DIFFICULT ONE, BUT

DURING THIS HALF HOUR, YOU'LL MEET SOME REMARKABLE PEOPLE

WHO HAVE SET OUT ON THEIR OWN UNIQUE PATHS TO BETTER HEALTH.

ANYONE WHO SUFFERS FROM MIGRAINES KNOWS HOW DEBILITATING

THEY CAN BE, FROM THROBBING PAIN TO LOSS OF PRODUCTIVITY AND

FAMILY TIME, THE COST IS HIGH.

AND UP TILL NOW, THERE HAVEN'T BEEN MANY ANSWERS FOR CHRONIC
SUFFERERS.

BUT DOCTORS ARE LEARNING SOMETHING NEW ABOUT MIGRAINES.

SOME OF THESE HEADACHES MAY BE CONNECTED TO A COMMON HEART

DEFECT THEY ALREADY KNOW TO CAUSE STROKES.

COULD MENDING THE HEART ACTUALLY PUT AN END TO THIS TERRIBLE
ACHE IN THE HEAD?

RESEARCHERS ARE DETERMINED TO FIND OUT.

>> BRING IT IN.

OH, FINALLY.

PERFECT SPIRAL.

CATCH THIS ONE.

NICE CATCH.

>> MATT FOSDICK IS FEELING GRATEFUL THESE DAYS, GRATEFUL TO

UNEDITED REALTIME CLOSED CAPTIONING

BE ABLE TO PLAY BALL WITH HIS SON, THANKFUL FOR HIS GOOD HEALTH.

A RECENT MEDICAL SCARE SENT MATT ON A JOURNEY HE COULDN'T HAVE IMAGINED.

IT ALL BEGAN ONE DAY AT WORK.

>> I FELT A SQUEEZE ON THE VERY, VERY TOP OF MY HEAD.

AND THEN THAT SQUEEZE RELEASED AND IMMEDIATELY FOLLOWING THAT, THE ROOM STARTED TO SPIN.

I COULDN'T SPEAK.

AT THE SAME TIME, I FELT THAT MY RIGHT FOOT WAS NUMB.

I COULDN'T FEEL MY RIGHT FOOT.

I WAS WRITING SOMETHING DOWN.

AS I WAS WRITING, I COULDN'T COMPLETE THE WORD WHEN I TRIED TO FORCE MY PEN TO GO PAST THE S TO GO TO AN O, IT WENT DOWN INSTEAD OF UP, AND THEN IT STOPPED.

>> THOSE SYMPTOMS SOON WENT AWAY, BUT THE MIGRAINE MATT HAD SUFFERED WITH FOR FIVE DAYS ONLY GOT STRONGER.

MATT HAS HAD BAD MIGRAINES SINCE CHILDHOOD, BUT THIS WAS DIFFERENT.

A TRIP TO THE HOSPITAL WOULD REVEAL THIS HEALTHY 37-YEAR-OLD HAD A STROKE.

>> I THOUGHT STROKES WERE FOR PEOPLE MUCH, MUCH OLDER.

AND I JUST -- I WAS SHOCKED AT IT.

>> FROM THE MOMENT THEY SAID STROKE, I FELT LIKE EVERYTHING WAS A TIME BOMB TYPE OF THING.

AT ANY MOMENT I COULD -- YOU KNOW, HE COULD BE PARALYZED.

I COULD LOSE HIM.

>> TEST RESULTS POINTED TO A LIKELY CAUSE.

A HOLE BETWEEN THE TWO UPPER CHAMBERS OF THE HEART CALLED A PATENT FORAMEN OVALE.

THAT'S LATIN FOR OPEN OVAL HOLE.

DOCTORS ROUTINELY GO IN AND CLOSE THE HOLE TO PREVENT MORE STROKES.

>> THAT HOLE IS ACTUALLY A NORMAL STRUCTURE IN ALL OF US AT BIRTH.

AND IN MOST PEOPLE, IT CLOSES DURING EARLY CHILDHOOD.

BUT IN SOME ADULTS, IT PERSISTS, AND IT CAN ALLOW BLOOD CLOTS OR OTHER THINGS TO CROSS FROM THE RIGHT SIDE OF THE HEART TO THE LEFT SIDE OF THE HEART AND POTENTIALLY CAUSE STROKE.

>>Angie Moreschi: BUT DOCTORS HAVE DISCOVERED ANOTHER POTENTIAL BENEFIT TO MENDING THIS HOLE IN THE HEART. MANY STROKE PATIENTS WHO HAD THE HOLE CLOSED REPORTED FEWER MIGRAINES.

AND FOR SOME, THEY STOPPED ALL TOGETHER.

DOCTORS AREN'T SURE WHY, BUT THEY HAVE SOME THEORIES.

>> WHEN THE HOLE IS CLOSED, THERE IS NO OPPORTUNITY FOR THE BLOOD TO GO INTO THE WRONG PLACE FORMING TINY LITTLE CLOTS AND THEN CAUSING MIGRAINE.

>>Angie Moreschi: DR. MARIA-CARMEN WILSON STREETS MIGRAINE

PATIENTS AT TAMPA GENERAL'S PAIN MANAGEMENT AND HEADACHE CLINIC.

SHE SAYS A STUDY IS NOW UNDERWAY TO DETERMINE IF CORRECTING THIS COMMON HEART DEFECT IS AN EFFECTIVE TREATMENT FOR MIGRAINES.

IN THIS STUDY, DOCTORS WILL PASS A SMALL IMPLANT CALLED A BioSTAR THROUGH A VEIN IN THE LEG AND UP INTO THE HEART. THE BioSTAR OPENS LIKE AN UMBRELLA ON EACH SIDE PLUGGING THE HOLE BETWEEN THE RIGHT AND LEFT ATRIA.

>> I THINK IT'S CERTAINLY SOMETHING TO CONSIDER FOR SOME PATIENTS, ESPECIALLY IF THEY HAVE TRIED A NUMBER OF MEDICATIONS AND THEY ARE NOT BETTER, AND THEY HAVE TO LIVE ALWAYS IN FEAR NOT KNOWING WHEN THEY ARE GOING TO HAVE THE NEXT ATTACK.

>> IT WILL BE FINE.

>>Angie Moreschi: ON THIS DAY, MATT WILL HAVE A SIMILAR PROCEDURE DONE.

HIS FAMILY IS ANXIOUS, BUT HOPEFUL.

>> THE FIRST CONCERN WAS I DIDN'T WANT HIM TO HAVE ANOTHER STROKE.

WHEN WE LEARNED THAT THIS WOULD POSSIBLY AFFECT HIS MIGRAINES IN SUCH A POSITIVE WAY, I JUST THOUGHT, THANK YOU.

>> IF THE PROCEDURE IS ABLE TO ELIMINATE THEM 100%, THAT WOULD BE THE BEST-CASE SCENARIO.

IF IT'S SOMETHING THAT CAN LIMIT THEM OR REDUCE THE

INTENSITY OR SEVERITY OF THEM, I THINK THAT'S WONDERFUL.

>>Angie Moreschi: CARDIOLOGIST DR. TOM SULLEBARGER AND HIS TEAM WILL PASS THIS SMALL DEVICE CALLED A CardioSEAL THROUGH A CATHETER INTO MATT'S HEART TO SEAL THE HOLE.

>> THE REALITY OF IT IS, THEY ARE GOING INTO YOUR HEART. THEY ARE PUTTING YOU OUT, AND THERE CAN BE COMPLICATIONS.

>>Angie Moreschi: ONCE DOCTORS ARE SATISFIED MATT HAS NO BLOCKAGES IN HIS HEART, THEY INSERT A BALLOON TO MEASURE THE SIZE OF THE HOLE.

>> MEASURE THE DIAMETER OF THAT.

>>Angie Moreschi: WITHIN MINUTES, THE PEOPLE IS PREPARED TO INSERT THE SEAL.

>> ACROSS THE HOLE.

WE'LL PUSH THIS INTO THE LEFT ATRIUM AND THEN WE'LL JUST OPEN THIS UP.

>>Angie Moreschi: SOON THE ULTRASOUND SHOWS THE DEVICE IS SECURELY IN PLACE.

THE PROCEDURE IS A SUCCESS.

>> PERFECT.

THE HOLE IS CLOSED.

>>Angie Moreschi: MATT'S CHANCES OF HAVING ANOTHER STROKE ARE NOW DRAMATICALLY REDUCED.

NOT LONG AFTER HIS HEART PROCEDURE, WE VISIT MATT AND HIS FAMILY AT HOME.

HE'S FEELING STRONGER.

AND AS FOR HIS MIGRAINES, THERE'S GOOD NEWS SO FAR.

>> I'M SO EXCITED FOR HIM TO FEEL BETTER.

HE HASN'T HAD A HEADACHE.

THIS HAS BEEN THE LONGEST PERIOD HE'S GONE WITHOUT A HEADACHE AT ALL.

>>Angie Moreschi: OF COURSE, MATT WOULDN'T RECOMMEND HAVING A STROKE TO FIND A MIGRAINE CURE, BUT FOR THE FIRST TIME, HE'S OPTIMISTIC HIS CHRONIC HEADACHES MAY BECOME JUST A FADING MEMORY.

>> YEAH, IT IS A RATHER INVASIVE PROCEDURE, BUT LONG TERM, YOU THINK ABOUT THE QUALITY OF LIFE AND THE LONG-TERM GAIN, I THINK IT'S DEFINITELY WORTH IT.

>>Angie Moreschi: FOR SOME MIGRAINE PATIENTS, THIS PROCEDURE ELIMINATES THE HEADACHES COMPLETELY.

FOR OTHERS, IT MAKES THEM BETTER.

AND SOME, UNFORTUNATELY, DON'T GET ANY HELP FROM IT AT ALL.

IT DOES SEEM TO WORK BEST ON THOSE WHO GET MIGRAINES WITH AURA.

THAT'S THE DISTURBED VISION THAT COMES WITH THE ONSET OF A MIGRAINE.

NOW, TO MAKE SURE THIS STUDY IS SCIENTIFICALLY CONTROLLED,

HALF THE PATIENTS WILL GET THE BioSTAR DEVICE IMPLANTED.

THE OTHER HALF WILL NOT.

SUBSTANCE ABUSE AND ADDICTION ARE ON THE RISE AMONG WOMEN IN AMERICA.

AN ESTIMATED 15 MILLION WOMEN NATIONWIDE USE ILLEGAL DRUGS,
AND SIX MILLION ABUSE ALCOHOL.

THE PROBLEM TAKES A HEAVY TOLL ON WOMEN'S HEALTH.

THEY BECOME ADDICTED FASTER THAN MEN, AND THEIR BODIES ARE
DAMAGED MORE QUICKLY.

THEY ALSO RESPOND DIFFERENTLY TO TREATMENT.

THAT'S WHY A UNIQUE PROGRAM IN PINELLAS COUNTY IS HELPING
WOMEN ATTACK THEIR ADDICTION WITH A POWERFUL INCENTIVE, THE
BOND BETWEEN MOTHER AND CHILD.

¶ YOU'RE MY BEAUTIFUL BABY GIRL ¶

>>Angie Moreschi: KATHY CARUSO IS 27 YEARS OLD.

A NEW MOTHER, AND A RECOVERING DRUG ADDICT.

>> I STARTED USING DRUGS WHEN I WAS ABOUT 15 YEARS OLD.

IT GOT ME TO THE POINT WHERE I HAD NO MONEY.

I HAD NO JOB.

I HAD TO LIVE, SLEEP, YOU KNOW, OUTSIDE AND STUFF LIKE THAT.

IT WAS HORRIBLE.

>>Angie Moreschi: SHE SAYS GETTING PREGNANT WAS A WAKE-UP
CALL.

>> I DON'T WANT MY CHILD BEING TAKEN AWAY FROM ME BECAUSE
I'M TOO SELFISH.

>>Angie Moreschi: WITH A BABY ON THE WAY, KATHY STOPPED
USING.

BUT THEN HER WORLD WAS SHAKEN.

>> MY MOTHER, MY FATHER, MY HUSBAND ALL DIED WITHIN A YEAR

FROM DRUG OVERDOSES.

>> HER HUSBAND'S DEATH SEVEN MONTHS INTO HER PREGNANCY PUT HER OVER THE EDGE.

>> WHEN HE DIED, THAT WAS A LITTLE TOO MUCH FOR ME.

I DID RELAPSE.

THAT'S WHEN I DECIDED I HAD TO COME HERE BECAUSE I DID NOT WANT TO HAVE A DRUG-ADDICTED BABY.

>>Angie Moreschi: KATHY'S COUNSELOR RECOMMENDED SHE COME TO OPERATION PAR IN PINELLAS COUNTY.

IT'S A RESIDENTIAL DRUG TREATMENT CENTER FOR WOMEN IS ONE OF THE FEW IN THE COUNTRY THAT ALLOWS MOTHERS TO BRING THEIR CHILDREN WITH THEM.

>> I THINK IT'S INCREDIBLE THAT THIS FACILITY LET'S US HAVE OUR CHILDREN HERE.

I WOULD NOT HAVE COME IF I COULD NOT HAVE HAD ALEXA WITH ME.

>>Angie Moreschi: OPERATION PAR EXECUTIVE DIRECTOR NANCY HAMILTON SAYS THE BOND BETWEEN MOTHER AND CHILD IS A KEY COMPONENT TO THE SUCCESS OF THE PROGRAM.

>> FOR THE MOST PART, WOMEN WHO BRING THEIR CHILDREN TO TREATMENT HERE STAY LONGER.

THE LENGTH OF STAY IS DIRECTLY TIED TO POSITIVE OUTCOMES.

THE LONGER I CAN GET YOU TO STAY, THE BETTER YOU WILL BE.

>> I FINALLY ARRIVED AT A PLACE WHERE MY LIFE CAN BEGIN TO CHANGE.

>>Angie Moreschi: WOMEN IN THE PROGRAM BEGIN EACH DAY WITH A

MORNING MEETING RECITING THEIR CREDO, MANY WITH THEIR CHILDREN RIGHT BY THEIR SIDE.

>> HEAR MY ATTITUDE.

HOW I SEE THINGS.

>>Angie Moreschi: THE CHILDREN PROVIDE A POWERFUL INCENTIVE FOR THESE WOMEN TO GET AND STAY SOBER.

>> SHE SAW ME SOBER AND SHE SAW ME USE.

AND SHE SEES THE DIFFERENCE, AND SHE TELLS ME HOW MUCH SHE LOVES ME NOW.

SHE DIDN'T LIKE MOMMY WHEN SHE WAS FALLING ASLEEP OR ACTING STUPID.

>> DO YOU LIKE MOMMY BETTER NOW, SWEETIE?

>> YEAH.

>> WHAT WAS YOUR WAKE-UP CALL?

>> GOING TO JAIL.

I HAVE FIVE KIDS, SO I KNOW IT'S TIME TO STRAIGHTEN UP.

I CAN'T PLAY AROUND LIKE I'VE BEEN.

THIS IS LIKE THE LAST CHANCE.

>>Angie Moreschi: THE AREA WHERE THE LADIES LIVE WHILE THEY ARE IN REHAB IS CALLED PAR VILLAGE.

IT'S LAID OUT ON A SPRAWLING 2.5 ACRES, AND BY DESIGN, IT LOOKS MORE LIKE A NEIGHBORHOOD THAN A TREATMENT CENTER.

>> WHEN I CAME HERE, I WAS TOTALLY SHOCKED.

THEY ARE HOUSES, YOU KNOW, AND IT'S LIKE A HOME ENVIRONMENT.

>>Angie Moreschi: THE STAY HERE IS LONGER THAN MOST

RESIDENTIAL TREATMENT PROGRAMS, A YEAR AND A HALF.

IT'S A MAJOR COMMITMENT WHETHER WOMEN ARE HERE BY COURT
ORDER OR VOLUNTARILY.

AND IT'S NOT EASY.

>> DO YOU WANT TO DO SOME LEG EXERCISES?

>>Angie Moreschi: THE WOMEN FOLLOW A STRICT DAILY SCHEDULE
OF CARING FOR THEIR CHILDREN, DOING CHORES.

>> TODAY WE'RE GOING TO TALK ABOUT SMOKING, DRINKING AND
USING DRUGS.

>>Angie Moreschi: AND ATTENDING COUNSELING SESSIONS.

[KNOCK ON DOOR]

>> DORM CHECK.

>>Angie Moreschi: THE LADIES ALSO UNDERGO TOUGH PEER REVIEW.
THEY HOLD EACH OTHER RESPONSIBLE FOR THEIR WORK AND
BEHAVIOR.

>> MARTY.

>> PROBATIONARY CONTRACT --

>>Angie Moreschi: EVERY MORNING THEY STAND UP TO ANNOUNCE
THEIR VIOLATIONS TO THE GROUP AND THE CONSEQUENCES.

>> RULES HERE ARE ACTUALLY REALLY SIMPLE.

IF YOU CAN'T FOLLOW THEM HERE, HOW WILL YOU FOLLOW THEM ON
THE OUTSIDE?

>>Angie Moreschi: A MAJOR REWARD FOR STICKING TO THESE TOUGH
RULES IS GETTING TO KEEP CUSTODY OF THEIR CHILDREN, AND
RESEARCH SHOWS IT WORKS.

UNEDITED REALTIME CLOSED CAPTIONING

>> 70% OF ALL WOMEN WHO BROUGHT THEIR CHILDREN TO TREATMENT,
WHEN WE FOLLOWED THEM AT 18 AND 24 MONTHS PAST TREATMENT,
THEY HAD REGAINED AND MAINTAINED CUSTODY OF THEIR CHILDREN.
FOR WOMEN WHO HAD NOT BROUGHT THEIR CHILDREN TO TREATMENT,
NOT ONE OF THEM GOT THEIR CHILDREN BACK.

>>Angie Moreschi: RACHAEL IS ONE OF OPERATION PAR'S SUCCESS
STORIES.

SHE GRADUATED A YEAR AGO AND CONTINUES TO WORK AND LIVE
DRUG-FREE.

IT'S NO SMALL ACCOMPLISHMENT FOR THIS MOTHER OF TWO, GIVEN
DRUGS RULED HER LIFE FOR SO MANY YEARS.

>> WHEN I GOT A DOLLAR, I DIDN'T THINK ABOUT DIAPERS.

I THOUGHT ABOUT GOING AND GET DRUGS.

I SOLD IT SO I COULD MAKE MONEY TO GET MORE.

THAT WAS MY LIFE.

MY WHOLE LIFE.

>>Angie Moreschi: HER TIPPING POINT, HER REASON TO CHANGE,
HAVING HER KIDS TAKEN AWAY.

>> I LOST MY KIDS.

THE COPS CAME AND RIPPED MY KIDS OUT OF MY HANDS.

THAT WAS IT FOR ME.

THEY TOOK THEM OUT OF MY ARMS.

I HAD TO LOOK AT MY THREE-YEAR-OLD LITTLE GIRL AT THE TIME
AND TELL HER THAT SHE HAD TO BE A BIG GIRL AND GO WITH HER
BROTHERS AND TAKE CARE OF THEM.

>>Angie Moreschi: NOW, WITH THE HELP OF OPERATION PAR, SHE'S CLEAN, SOBER, AND SUCCESSFUL.

JUST RECENTLY PROMOTED TO MANAGER AT THE CHICK-FIL-A WHERE SHE WORKS.

>> ALL I WANT TO DO IS BE A GOOD MOM.

¶ THE BABIES GROW UP MUCH TOO FAST ¶

>>Angie Moreschi: MOMS LIKE KATHY WANT THAT, TOO, AS SHE CONTINUES HER JOURNEY TO SOBRIETY.

>> MY PLAN IS TO STAY HERE THE FULL 18 MONTHS.

THAT WAY I CAN BE STABLE WHEN I DO LEAVE HERE.

MY MAIN DREAM IS TO STAY SOBER AND BE A GOOD MOM.

¶¶

>>Angie Moreschi: SO MUCH HOPE FOR A BETTER LIFE.

OPERATION PAR SERVES MORE THAN 13,000 PEOPLE EACH YEAR WITH ITS RECOVERY AND INTERVENTION SERVICES.

IF YOU'D LIKE TO LEARN MORE ABOUT OPERATION PAR, YOU CAN

VISIT THEIR WEB SITE AT OPERATIONPAR.ORG.

YOU MAY HAVE HEARD OF THAT DANGEROUS CONDITION SCUBA DIVERS GET CALLED THE BENDS.

IT HAPPENS WHEN THEY SWIM UP FROM THE DEEP WATER TOO QUICKLY AND GAS BUBBLES FORM IN THEIR BLOODSTREAM.

THE ACCEPTED TREATMENT FOR MORE THAN HALF A CENTURY HAS BEEN THE USE OF THE HYPERBARIC CHAMBER.

WELL, AS IT TURNS OUT, THE HYPERBARIC CHAMBER IS REMARKABLY USEFUL FOR A WHOLE RANGE OF MEDICAL PROBLEMS.

UNEDITED REALTIME CLOSED CAPTIONING

JOHN O'BRIEN HAS DIABETES.

HE'S STRUGGLING WITH A FRUSTRATING FOOT WOUND, A COMMON
PROBLEM AMONG DIABETICS.

>> IT WOULDN'T QUITE HEAL.

IT WOULD GET WORSE.

CLOSE, GET WORSE.

FINALLY IT WOULD NOT EVEN START TO CLOSE.

>>Angie Moreschi: JOHN'S DOCTORS WANT TO JUMP START THE
HEALING PROCESS WITH THE HELP OF A HYPERBARIC CHAMBER.

>> OXYGEN USE UNDER PRESSURE ALLOWS FOR A LOT OF OXYGEN TO
CONCENTRATE INTO THE HUMAN BODY, THROUGH THE LUNGS, INTO THE
TISSUE AND SUPER ENRICHES, SUPER SATURATES THE TISSUE WITH
OXYGEN.

>>Angie Moreschi: MOST OF US THINK OF THE HYPERBARIC CHAMBER
AS A TREATMENT FOR DIVERS WHO GET THE BENDS.

IT'S BEEN USED FOR THAT FOR DECADES.

>> ALL RIGHT, BUDDY, HERE WE GO.

>>Angie Moreschi: MORE RECENTLY, RESEARCHERS HAVE DISCOVERED
THE HYPERBARIC CHAMBER IS EFFECTIVE IN TREATING A VARIETY OF
MEDICAL PROBLEMS, INCLUDING STUBBORN WOUNDS.

>> IT INCREASES OR CREATES REVASCULARIZATION.

CREATES NEW BLOOD VESSELS WHERE THERE WAS AN ABSENCE OF ONE.

>>Angie Moreschi: THE WOUND-HEALING EFFECTS CAN BE
ESPECIALLY CRITICAL TO SURGEONS WHO RELY ON THIS INNOVATIVE
THERAPY.

>> IF WE COULD CUT IT DOWN TO HEALING IN A WEEK BY ADDING SOMETHING THAT MAKES IT WORK 50 TIMES MORE EFFECTIVELY, THEN WE REALLY HAVE SOMETHING.

>>Angie Moreschi: BUT WOUND HEALING IS ONLY THE BEGINNING. SOME OF THE MOST EXCITING RESEARCH IN HYPERBARIC MEDICINE IS TAKING PLACE RIGHT HERE IN THE BAY AREA.

DR. JAY DEAN RUNS THE HYPERBARIC BIOMEDICAL RESEARCH LAB AT THE UNIVERSITY OF SOUTH FLORIDA.

HIS RESEARCH ON LIVING BRAIN CELLS COULD HAVE IMPLICATIONS FOR EVERYTHING FROM ALZHEIMER'S TO HEART DISEASE.

THE POTENTIAL IS ENORMOUS.

>> I SPECIFICALLY LOOK AT OXYGEN AND VERY INTERESTED IN EXCESS OXYGEN AND HOW IT AFFECTS THE FUNCTION OF BRAIN CELLS.

>>Angie Moreschi: THE ADDITION EARLIER THIS YEAR OF A REMARKABLE HIGH-TECH PIECE OF EQUIPMENT WILL HELP TAKE THE RESEARCH TO A NEW LEVEL.

IT'S A HYPERBARIC CHAMBER CUSTOM-MADE TO FIT AN ATOMIC FORCE MICROSCOPE.

USING THE CHAMBER AND THE MICROSCOPE MOUNTED INSIDE, THEY CAN DO TESTS ON LIVING BRAIN TISSUE AT A MOLECULAR LEVEL.

>> THE ATOMIC FORCE MICROSCOPE IS A TYPE OF SCANNING PROBE MICROSCOPE THAT USES A SMALL PROBE THAT MAKES CONTACT WITH THE SURFACE.

IT RASTER SCANS BACK AND FORTH SIMILAR TO A NEEDLE ON A

RECORD PLAYER.

THE INFORMATION OF THE PROBE TIP MOVING ACROSS THE SURFACE IS RECORDED BY A LASER.

>>Angie Moreschi: WHEN CELLS USE OXYGEN, THEY GIVE OFF A BY-PRODUCT CALLED FREE RADICALS THAT ARE LINKED TO STROKES AND CANCERS.

THAT'S WHY NUTRITIONISTS RECOMMEND DIETS RICH IN ANTIOXIDANTS LIKE BLUEBERRIES AND BROCCOLI, WHICH REDUCE FREE RADICALS.

>> THESE CELLS WERE EXPOSED TO HYPERBARIC OXYGEN, AND WE ARE SPECIFICALLY LOOKING AT THE INCREASED ROUGHNESS OF THE SURFACE OF THE MEMBRANE.

>>Angie Moreschi: WHILE HYPERBARIC RESEARCH HAS BROAD, NEW IMPLICATIONS IN THE FIELD OF MEDICINE TODAY, ITS ORIGINAL FOCUS CONTINUES.

RESEARCHERS HAVE BEEN TRYING TO MANAGE THE EFFECTS OF AIR PRESSURE AND DECOMPRESSION ON HUMANS FOR YEARS.

IN WORLD WAR II, PILOTS USED OXYGEN MASKS TO CONTROL THEIR BREATHING.

IN 1944, THE U.S. USED ITS FIRST PRESSURIZED BOMBER, THE B-29 FLYING FORTRESS TO HELP EASE THE MEDICAL PROBLEMS THAT COME WITH HIGH ALTITUDE FLIGHT.

AND EVEN TODAY, DIVERS WHO USE PRESSURIZED OXYGEN FOR TOO LONG FACE THE RISK OF GRAND MAL SEIZURES.

THEY COME WITHOUT WARNING, AND THE NAVY IS FUNDING DR. DEAN

TO FIND OUT WHY.

>> OBVIOUSLY, YOU DON'T WANT TO HAVE SEIZURES WHILE YOU'RE UNDERWATER, SO THE NAVY WOULD LOVE TO FIGURE OUT HOW TO PREDICT AND PREVENT ONSET OF OXYGEN TOXICITY OF THE NERVOUS SYSTEM.

>>Angie Moreschi: WHILE THE FUTURE OF HYPERBARIC RESEARCH LOOKS BRIGHT FOR A HOST OF HEALTH CHALLENGES, PATIENTS LIKE JOHN O'BRIEN ARE GRATEFUL FOR WHAT IT'S DOING TODAY. THREE WEEKS INTO HIS TREATMENT, HE HAS A REPORT FROM HIS DOCTOR.

>> HE JUST TOLD ME, WOW.

HE SAID, IT'S CLOSED.

THE AREA HAS CLOSED BY ABOUT 30%.

HE SAID AND DEPTH-WISE, IT HAS SEALED UP ABOUT 40%.

>>Angie Moreschi: JOHN IS THRILLED THAT HIS HEALING IS GOING SO WELL, BECAUSE HE HAS A BIG TRIP PLANNED.

>> I'VE GOT TO GO TO ENGLAND TO SEE MY GRANDBABIES.

>>Angie Moreschi: TWELVE YEARS AGO, I WORKED ON A STORY ABOUT MUSCULAR DYSTROPHY.

AND I MET AN ADORABLE LITTLE BOY NAMED CHRISTOPHER RHOADES.

HE WAS ONLY A FIRST GRADER THEN, AND HIS PROGNOSIS WAS FRIGHTENING.

WHO COULD HAVE IMAGINED ALL THE TWISTS AND TURNS

CHRISTOPHER'S LIFE WOULD TAKE?

NO ONE HAS TO LECTURE THIS 18-YEAR-OLD TO MAKE THE MOST OF

EVERY SINGLE DAY.

CHRISTOPHER RHOADES LIVES WITH GUSTO.

>> THAT WAS PRETTY GOOD.

THAT WAS GOOD.

>>Angie Moreschi: HIS MOM TRACIE AND STEP DAD PHIL ALWAYS
CHEERING HIM ON.

>> OH, YEAH!

>>Angie Moreschi: CHRISTOPHER WAS DIAGNOSED WITH DUCHENNE
MUSCULAR DYSTROPHY WHEN HE WAS THREE YEARS OLD.

THE DISEASE VICIOUSLY STRIKES WHEN PROTEIN THAT HOLDS MUSCLE
FIBERS TOGETHER IS MISSING.

THERE IS NO CURE.

>> WHEN I READ THE PROGNOSIS, I MEAN, AT THE TIME, THE
PROGNOSIS WAS THAT THEY ONLY LIVED UNTIL MAYBE THEIR LATE
TEENS.

AND LOST THE ABILITY TO WALK AT, SAY, AGE EIGHT OR NINE AND
LIVED TILL 18.

SO IT WAS DEVASTATING.

>> CAN YOU LIFT MY LEG UP TO YOUR HAND HERE?

>> NOT REALLY, NO.

>>Angie Moreschi: DESPITE THE DIFFICULTIES OF HIS DISEASE,
CHRISTOPHER HAS EXCEEDED EXPECTATIONS.

>> I THINK BECAUSE OF BETTER GENERAL CARE, PAYING MORE
ATTENTION TO HEART FUNCTION, PAYING MORE ATTENTION TO
BREATHING, PREVENTING INFECTIONS, ALONG WITH ONE OTHER

FACTOR.

HE'S BEING TREATED WITH STEROIDS.

PULL MY HAND BACK TOWARDS YOU.

>>Angie Moreschi: UNLIKE MOST BOYS WITH DUCHENNE MUSCULAR DYSTROPHY, CHRISTOPHER COULD STILL WALK SHORT DISTANCES UNTIL HE WAS 14.

>> THAT'S ACTUALLY KIND OF DIFFICULT TO KEEP THEM --

>>Angie Moreschi: CHRISTOPHER'S PATIENCE IS CERTAINLY A VIRTUE.

HE'S EXAMINED BY SEVEN DIFFERENT DOCTORS SEVERAL TIMES A YEAR.

>> LET ME SEE YOUR BACK.

CAN YOU LEAN FORWARD?

>>Angie Moreschi: DR. RAYMOND FERNANDEZ FEELS ALMOST LIKE FAMILY.

HE'S BEEN CHRISTOPHER'S PEDIATRIC NEUROLOGIST SINCE THE BEGINNING OF CHRISTOPHER'S BATTLE WITH MUSCULAR DYSTROPHY.

>> FOR A FEW MONTHS, I FEEL -- A LITTLE WEAKER.

>>Angie Moreschi: ANY SIGN OF WEAKENING MUSCLES IS REASON FOR CONCERN.

BUT THE TWO MUSCLES THAT POSE THE BIGGEST RISKS, HIS HEART AND LUNGS, REMAIN STRONG.

>> I THINK CHRISTOPHER DESERVES MOST OF THE CREDIT AND HIS FAMILY THEN PRETTY MUCH THE REST OF IT.

>> OKAY.

ARE WE READY?

>> NO.

>> NO.

[LAUGHTER]

WELL, READY OR NOT, HERE WE GO.

THERE YOU GO.

DO YOUR THING.

>>Angie Moreschi: HIS MOM CAN NO LONGER LIFT HIM IN AND OUT OF THE SHOWER, SO A \$14,000 LIFT SYSTEM WAS INSTALLED. INSURANCE WOULDN'T PAY FOR IT, SO TRACIE'S FRIENDS RAISED THE MONEY.

SIMPLE THINGS AREN'T USUALLY SIMPLE FOR CHRISTOPHER.

REGARDLESS, HE DOESN'T LET IT GET HIM DOWN.

>> IT'S JUST LIKE THE PEOPLE WHO DO COMPLAIN ABOUT IT ALL THE TIME, LIKE, WHY HAVE A MISERABLE LIFE?

JUST BECAUSE YOU HAVE A DISABILITY DOESN'T MEAN YOU HAVE TO BE DEPRESSED ALL THE TIME.

AND, LIKE, SIT AROUND AND BE A HERMIT.

>>Angie Moreschi: CHRISTOPHER HASN'T LET OPPORTUNITIES SLIP BY.

NINE YEARS AGO, HE AND HIS FAMILY HEADED TO HOLLYWOOD TO MEET ACTOR WILL SMITH THANKS TO THE MAKE A WISH FOUNDATION. TO STOP IT OFF, WILL SMITH INTRODUCED THEM TO GEORGE CLOONEY.

>> IT WAS A LOT OF FUN, BUT MY MOM MOSTLY ENJOYED GEORGE

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CLOONEY.

>>Angie Moreschi: AMONG FAMILY AND FRIENDS, CHRISTOPHER IS KNOWN AS QUITE THE COMEDIAN.

>> CHRISTOPHER HAS AN ABUNDANCE OF PERSONALITY.

HE'S ALWAYS LAUGHING.

HE LOVES TO MAKE JOKES ABOUT EVERYTHING.

>>Angie Moreschi: HE AND HIS MOM CAN LAUGH ABOUT IT NOW, BUT AS A YOUNGSTER APPEARING ON THE MDA TELETHON WASN'T SO AMUSING, NOT WITH THAT HAIRSTYLE.

>> WE'LL BUY HIM A NEW BOWL FOR HIS NEXT HAIRCUT.

>>Angie Moreschi: NOW HE'S MAKING MEMORIES ON A SOCCER TEAM FOR THE FIRST TIME IN HIS LIFE.

>> NICE KICK!

>>Angie Moreschi: THE TAMPA THUNDER POWER WHEELCHAIR TEAM IS RANKED THIRD IN THE NATION.

THESE ATHLETES HAVE A GREAT TIME, BUT MAKE NO MISTAKE, THEY WANT TO BE NUMBER ONE.

>> ONE OF OUR PLAYERS, HE WAS ON TEAM USA, AND THEY WON THE WORLD CUP IN TOKYO.

HE MADE THE WINNING SHOT.

I THINK WE'RE PRETTY GOOD.

>>Angie Moreschi: AND SO DO THEIR LOYAL FANS.

CHRISTOPHER'S STEP DAD HELPS OUT WHILE HIS MOM AND GRANDMA WATCH ALL THE ACTION.

>> I AM SO PROUD THAT HE'S INVOLVED IN SOMETHING LIKE THIS.

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THIS HAS BEEN SO GREAT FOR HIM, JUST TO SEE HIM OUT THERE
AND INTERACT WITH HIS TEAM MEMBERS AND BE INVOLVED IN A TEAM
SPORT.

TO BE HONEST WITH YOU, MY BELIEF IS THAT CHRISTOPHER MUST
HAVE BEEN SENT TO US FOR A REASON.

DAY BY DAY AND ENJOY IT WHILE HE'S HERE.

>>Angie Moreschi: ONE OF THE THINGS CHRISTOPHER ENJOYS MOST
IS NATURE.

>> I USUALLY COME HERE TO GET AWAY FROM THE FAST PACE.

I LIKE NATURE.

IT'S VERY INTERESTING.

>> I DO REMEMBER WHEN TIME WHEN, I THINK IT WAS FOURTH
GRADE, WE WERE ON OUR WAY OUT OF THE PARK AND HE SAID, I
NEVER KNEW I WOULD HAVE SUCH A GOOD LIFE.

IT'S AMAZING THAT SOMEONE WHO IS DEALING WITH STRUGGLING AND
HE COULDN'T KEEP UP WITH HIS FRIENDS ON THE PLAYGROUND, YET
HE STILL FELT LIKE HE HAD SUCH A GOOD LIFE.

>>Angie Moreschi: THERE ARE 8,000 BOYS IN THIS COUNTRY WHO
HAVE DUCHENNE MUSCULAR DYSTROPHY.

AND HALF OF THOSE CASES, THERE IS NO FAMILY HISTORY OF THE
DISEASE.

TODAY, CHRISTOPHER IS SHOWING THE REST OF US HOW TO LIVE
LIFE TO THE FULLEST.

FOR "SMART HEALTH," I'M ANGIE MORESCHI.

THANKS SO MUCH FOR WATCHING.

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