

FAT, FAT, FAT AND FAT

THESE ARE TIMES OF INCREASING SUB-SPECIALIZATION AND METICULOUS CATEGORIZATION. YOUR GRANDFATHER'S "GENERAL PRACTITIONER" KNEW THE ENTIRE FAMILY MEDICAL HISTORY AND NEVER NEEDED TO REFER TO CHARTS OR OFFICE RECORDS; NOWADAYS HIS JOB DESCRIPTION HAS BEEN SPREAD AMONG A DOZEN PRACTITIONERS, FROM CARDIOLOGIST TO ORTHOPEDIST TO INFECTIOUS DISEASE CONSULTANT.

HAVE YOU TRIED TO CALL A PHARMACY, UTILITY, AIRLINE OR A DEPARTMENT STORE LATELY? "PRESS 1 IF YOU WANT..." BEGINS A LONG LIST OF MENU OPTIONS, OFTEN DOZENS, ENDING IN TELECOMMUNICATIONS LIMBO IF YOUR PARTICULAR NEED ISN'T MATCHED BY A NUMERICAL CHOICE.

WOULD YOU LIKE A CUP OF COFFEE? WOULD YOU LIKE IT FLAVORED/DECAFFEINATED/STRONG/GIGANTIC WITH SOYMILK/FOAM/SUGAR-SUBSTITUTE IN A PAPER CUP/MUG?

REMEMBER THE GOOD OLD DAYS WHEN PEOPLE WERE EITHER FAT OR THIN? WELCOME TO THE NEW AGE OF ADIPOSE TISSUE DEMOGRAPHICS. IF DOCTORS CAN SPECIALIZE, WHY CAN'T YOUR BLUBBER?

SCIENTISTS HAVE DISCOVERED THAT WE HAVE THE ABILITY TO GET FAT IN VARIOUS DISTINCT LAYERS JUST LIKE THOSE DIFFERENT SHEETS OF ROCK THAT TOURISTS PHOTOGRAPH IN GRAND CANYON. I'M SURE THAT YOU DON'T NEED ANY HELP IDENTIFYING THE OUTERMOST LAYERS. HOWEVER, IF YOU'VE REMOVED ALL OF THE MIRRORS FROM YOUR HOME, STAND UP,

LOOK DOWN AND SEE IF YOUR FEET ARE VISIBLE.

WHAT YOU ARE NOW STARING AT OR GRASPING DURING A BELLY-LAUGH IS PROPERLY REFERRED TO AS SUBCUTANEOUS FAT. IT'S JUST UNDER THE SURFACE OF YOUR SKIN, HENCE THE DESCRIPTIVE NAME. SUBCUTANEOUS FAT IS FURTHER SUBDIVIDED INTO SUPERFICIAL AND DEEP LAYERS, THE WIDTH DEPENDING ON YOUR UNDERSTANDING OF THE FIRST LAW OF THERMODYNAMICS (SEE SEPARATE DISCUSSION).

AS UNAPPEALING AS SUBCUTANEOUS FAT MAY LOOK, IT IS BIOCHEMICALLY BENIGN AND PROBABLY HAS MINIMAL IMPACT ON AN INDIVIDUAL'S HEALTH AND LONGEVITY. WOMEN WITH "CELLULITE" IN THE HIPS AND THIGHS DO NOT HAVE THE CHARACTERISTIC BLOOD PRESSURE AND CHOLESTEROL PROBLEMS ASSOCIATED WITH SEVERE OBESITY, NOR DO SUMO WRESTLERS. THE OUTERMOST FAT CELLS OF THE HUMAN BODY ARE PRIMARILY STORAGE FACILITIES FOR ENERGY, NEEDED ONLY WHEN GLUCOSE (FOOD) IS SCARCE AND THESE OIL DROPLETS CAN TAKE THE PLACE OF DIETARY CARBOHYDRATES. REMEMBER THESE FACTS, FOR WE WILL RETURN TO THIS ISSUE IN A SHORT WHILE.

DEEP DOWN INSIDE YOUR BELLY IS ANOTHER "LAYER" OF FAT, BUT THIS ONE IS SPREAD AMONG VARIOUS CRUCIAL INTERNAL ORGANS AND TISSUES. YOUR DOCTOR CANNOT FEEL IT, A ROUTINE X-RAY CANNOT SEE IT, AND BLOOD TESTS CANNOT IDENTIFY IT. WELCOME TO THE BRAVE NEW WORLD OF VISCERAL FAT, A NEFARIOUS "ORGAN" THAT MAY BE AT THE EPICENTER OF DIABETES, HEART DISEASE, STROKE AND SOME TYPES OF CANCER

(BREAST AND COLON).

UNLIKE THE RELATIVELY HARMLESS FAT THAT JIGGLES AND WIGGLES AT YOU ON THE BEACH, INTRA-ABDOMINAL ADIPOSE CELLS HAVE A METABOLIC MIND OF THEIR OWN: THEY CAN RELEASE THEIR CONTENTS INTO THE INTESTINAL CIRCULATION UNNECESSARILY, EVEN IF EXTRA ENERGY MOLECULES ARE NOT NEEDED. A SUDDEN WAVE OF "FREE FATTY ACIDS" CAN TRAVEL FROM VISCERAL FAT TO THE LIVER. HERE TWO POTENTIALLY DANGEROUS PHENOMENA MAY HAPPEN: INSULIN RESISTANCE (AND SUBSEQUENTLY OVER ACTIVITY OF THE PANCREAS) AND OVERPRODUCTION OF GLUCOSE (AN ACTIVITY NORMALLY SUPPRESSED BY INSULIN). LESS SUGAR IS TAKEN UP BY THE PERSON'S MUSCLES, MORE ACCUMULATES IN THE BLOOD STREAM, AND PRESTO-CHANGO, DIABETES IS DIAGNOSED.

SOME RESEARCHERS EVEN FEEL THAT FATTY ACIDS DIRECTLY DAMAGE THE PANCREAS, A POSSIBLE REASON FOR THE WORSENING EPIDEMIC OF DIABETES. OTHER SCIENTISTS HAVE SHOWN THAT CIRCULATING FREE FATTY ACIDS IMMEDIATELY ELEVATE BLOOD PRESSURE. GENETICISTS POINT TO A RELATIONSHIP BETWEEN EXCESS VISCERAL FAT, CIRCULATING FAT (AS TRIGLYCERIDES) AND AN ENZYME, LIPOPROTEIN LIPASE THAT CAN CAUSE YELLOW, WAXY BUILDUP ON YOUR INNER VITAL ORGANS, WORSE STAINING THAN YOUR KITCHEN FLOOR EVER HAD!

WHAT'S A PERSON TO DO? BUT WAIT, THERE'S MORE BAD NEWS: WHEN HIGHLY REFINED CAT SCANNING WAS PERFECTED, IT REVEALED THAT EVEN SOME THIN PEOPLE, PARTICULARLY

DIABETICS, HAD A DISPROPORTIONATE AMOUNT OF VISCERAL FAT...AND DEVELOPED THE METABOLIC SYNDROME JUST AS READILY AS THEIR CARELESS OVERWEIGHT FRIENDS. A STARTLING FACT MAY ALREADY BE APPARENT TO YOU: BECAUSE BODY WEIGHT IS NOT A COMPONENT OF THE METABOLIC SYNDROME, YOU LITERALLY COULD BE THIN ON THE OUTSIDE AND "FAT" ON THE INSIDE.

NOW THAT YOU ARE AN EXPERT IN FAT, FAT, FAT AND FAT, YOU CAN CERTAINLY UNDERSTAND WHY RECENT STUDIES SHOW THAT LIPOSUCTION HAS NO BIOCHEMICAL BENEFIT. SUBCUTANEOUS FAT IS METABOLICALLY INERT, AND MACHINERY THAT SLURPS IT OUT OF YOUR BELLY AND SQUIRTS IT INTO A JAR MAKES YOU OUTWARDLY "THINNER" BUT INWARDLY UNCHANGED. LIPOSUCTION, "TUMMY TUCKS", AND PANNICULECTOMY SHOULD BE CONSIDERED COSMETIC SURGERY, AESTHETICALLY USEFUL BUT SUPERFICIAL "CURES".

ON THE OTHER HAND, REGULAR AEROBIC EXERCISE UTILIZES FUEL FROM THOSE AWFUL VISCERAL FAT CELLS, DRAINING THEM OF THEIR OIL DROPLETS AND BURNING THEM OFF HARMLESSLY. ADRENALIN PRODUCED DURING YOUR WORKOUTS AFFECTS VISCERAL, NOT SUBCUTANEOUS FAT, EXACTLY THE METABOLIC PATHWAY THAT FAVORS HEALTH, LONGEVITY AND GLAMOROUS BEAUTY. AND WEIGHT LOSS, AS IF YOU DIDN'T KNOW, IT A GUARANTEED WAY TO CHANGE YOUR BODY COMPOSITION FAVORABLY.

WHAT THE MORAL OF THIS STORY? YOU CAN'T TREAT ANY

HEALTH PROBLEM SUPERFICIALLY. YOU MAY THINK OF FAT AS THE STUFF THAT CLINGS TO THE OUTSIDE OF OPERA SINGERS, BUT IN TRUTH IT'S PART OF SEVERAL DIFFERENT TISSUE LAYERS. DEEP DOWN IN THE RECESSES OF YOUR ABDOMEN, VISCERAL FAT IS PLANNING A SNEAK ATTACK ON YOUR HEALTH. SINCE KNOWLEDGE IS POWER, IT'S TIME TO FIGHT BACK.