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Aging Well Part VIII Body Composition

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Maximizing your health and consequently "aging well," involves many simple and obvious elements, as well as complex ones. One of the simple but critical issues is your body habitus. We commonly associate our body image with our height and our weight. However, there are many other aspects of body composition, some of which we have discussed:

- **BMI** – Body Mass Index which is a calculated value based on your height and weight.
- **BMR** – Basal Metabolism Rate which is a calculation based on your height, weight, age and activity level. This tells how many calories you need each day in order to maintain your ideal body weight.
- **Body Fat %** -- This tells you what percent of your weight is fat and what is lean body mass (muscle and bone). The higher your body fat, the lower your basal metabolism rate, thus the more weight you will gain on a lower calorie diet. Also, the higher your body fat, the lower your total body water will be.
- **Total Body Water %** -- For the importance of water in the body see *The Examiner*, January 8, 2004.

As you become more aware of the significance of these measurements of body composition, you begin to see the inadequacy of simply looking at height and weight.

Are you and apple or a pear?

Waist-to-hip ratio (WHR) looks at the proportion of fat stored on your body around your waist and hip. Most people store their body fat in two distinct ways:

- around the middle (**apple** shape)
- around the hips (**pear** shape).

For most people, being an apple shape (carrying extra weight around the middle) places them in a higher health risk category than being a pear shape (carrying extra weight around the hips or thighs). But remember: this is just one assessment that is used in measuring weight-related health risk. Total obesity may still be a greater risk than where fat is stored on your body.

Why Body Shape is Important

We all know that being overweight, obese or carrying excess body fat is bad for our health. But *total* body fat is not the only health risk - *body fat distribution* is also significant. This is why body shape is important.

Apple-shaped people store body fat around the abdomen and chest, surrounding internal organs, such as the heart. For this reason, apple shapes have a higher risk of diabetes, heart disease, stroke, high blood pressure and gall bladder disease. That said, "Apples" have an easier time losing excessive fat that has settled in the midsection - which helps to reduce their increased health risk.

Pear-shaped people have hips wider than their shoulders because their bodies store fat there and on the thighs. Pear-shapes carry their extra weight below the waistline, and do not seem to have as high a risk of developing the above conditions as "apples" do. Pear shape people usually lose fat in the upper body, so their overall shape doesn't change much when they lose weight.

Apple Body Shape vs. Pear Body Shape Summary

When you compare an apple to a pear shape with a similar body weight, the risk for disease is much greater in the apple. But when apples lose weight, they reduce fat in the upper body, look different and reduce their risk of disease.

When Apples lose weight, they do reduce the fat in the upper body, so they look different (and reduce their risk of disease). Pears also tend to lose fat in the upper body, so even when they lose weight their overall shape does not change much. Pear shapes tend to find it difficult to lose fat from their main fat stores on the lower half of their body.

Body Shape - Health Risks - Some Research Findings of Fat Distribution

- It is healthier for children to be shaped like a pear than shaped like an apple.
- Earlier studies indicated that pear-shaped adults have higher blood pressure and lower levels of the "good cholesterol" known as high-density lipoprotein (HDL) than those with the apple shape.
- But a study in Circulation, the journal of the American Heart Association, found that with children and adolescents greater upper body fat was associated with higher levels of the blood fat, triglycerides, and lower HDL cholesterol.
- In addition, systolic blood pressure - the upper number of a blood pressure reading - was highest in children with the most fat overall and in those who were apple-shaped.
- Harvard University researchers found that women with waistlines of 38 inches or more had more than three times the risk of heart disease than those with waists of 28 inches or less.
- The Harvard study found the magic number is .80 - in other words, a woman's waist size divided by her hip size should yield a number no greater than .80.

Body Shape - Health Risks - Summary

- Previous fat distribution studies have shown that men who are apple shape are at increased risk for developing heart disease. Taken with the newest findings about women, the apple body shape becomes a warning sign of possible heart disease for all adults.

- But body shape is just one of the factors to be considered when assessing your risk for disease. Other issues to consider include family history, tobacco use, cholesterol levels and lifestyle.
- If you are an apple-shape with a higher waist-hip ratio, consider taking dietary advice and modifying your eating habits. Also, talk to a fitness instructor about increasing your level of physical activity.
- If you ar a pear with a healthy weight, focus on eating well, being active and feeling good about yourself. Respecting your body, the way it is, is a healthier alternative than dieting.

Waist to Hip Ratio - How to Measure -- Follow instructions below:

- Measure waist at the navel in men, and midway between the bottom of the ribs and the top of the hip bone in women.
- Measure hips at the tip of the hip bone in men and at the widest point between the hips and buttocks in women.
- Divide your waist size at its smallest by your hip size at its largest and you get a Waist-to-Hip ratio.
- Ideally, women should have a waist-to-hip ratio of 0.8 or less.
- Ideally, men should have a waist-to-hip ratio of 0.95 or less.

Total Body Fat Percent

The higher your percentage of fat above average levels, the higher your health risk for weight-related illness, like:

- heart disease,
- high blood pressure,
- gallstones, type
- 2 diabetes,
- osteoarthritis, and
- Certain cancers.

Also, the more fat you have in your body (and thus the less lean body tissue or muscle you have) the less calories you need to maintain your weight.

Intra-Abdominal Fat (IAF - Central Fat Distribution)

Where excess fat is located may be more important than the amount of body fat you have. Recent studies have shown that if a person carries excess fat around the middle/waist, they run a higher risk of developing the diseases mentioned above than they carry the same amount of fat around the thighs and butt.

In some body fat studies, intra-abdominal fat (IAF) has been even more closely associated with Type 2 Diabetes (Non-insulin Dependent Diabetes - NIDD) than overall weight, and is closely associated with insulin resistance. IAF is also associated with increased risk of

hormonal cancers (e.g. breast cancer), ovulatory dysfunction and sleep apnea.

Body Shape - Another Classification of Body Types

Another method used to classify body shape, called somatotyping, rates a person's body on three factors:

- ectomorphy (slenderness),
- endomorphy (fatness) and
- mesomorphy (muscularity).

The three main types of body shapes under this classification are:

Ectomorph Body Shape

A person with this type of body shape is generally tall and thin with long arms and legs. These people have difficulty gaining weight and muscle no matter how much they eat or how hard they weight train. They have the body type you tend to see in ballet dancers, runway models, long-distance runners, and some basketball players. A very small proportion of the population has this type of body.

Mesomorph Body Shape

A person with this type of body shape has a higher muscle-to-fat ratio than most and is generally shorter with stocky arms and legs. These people are strong and tend to gain muscle mass when they do strength training. They may find it difficult to lose weight, but they excel in power sports like soccer, softball, vaulting in gymnastics, sprinting events in track and field.

Endomorph Body Shape

A person with this type of body shape is generally shaped like apples or pears with a higher than average body-fat-percentage. Their bodies resist losing weight and body fat no matter how restrictive they are with their eating. In fact, the more they “diet,” the more their metabolisms slow down to resist weight loss. These people are better able to handle long periods of starvation and famine (which was a benefit to our ancestors).
Sports they excel at are distance swimming, field events, and weight lifting.

Waist Circumference and Health

Waist circumference and BMI are interrelated, but waist circumference provides an independent prediction of risk over and above that of BMI. This because body fat that accumulates around the stomach area poses a greater health risk than fat stored in the lower half of the body.

Waist Circumference - Gender

A man's body is typically more "apple" shaped. He tends to collect fat around his waist and stomach area (beer belly). By contrast, women's bodies are more "pear" shaped as they tend to collect fat on their hips, buttocks and thighs. People with "apple" body shapes are more prone to develop diabetes and heart disease than those with "pear" body shapes.

Waist Circumference - Relevant for Normal Weight and Overweight

Waist circumference measurement is particularly useful in patients who are categorized as overweight on the BMI scale, although increased waist circumference can also be a marker for increased risk even in persons of normal weight. However, for someone with a BMI of 35 or over (obese), waist circumference has little added predictive power of disease risk beyond that of BMI. It is therefore not necessary to measure waist circumference in individuals with BMIs of 35 or over.

Waist Circumference - Health Risks

A high waist circumference is associated with an increased risk for type 2 diabetes, dyslipidemia, hypertension, and CVD in patients with a BMI in a range between 25 and 34.9. Monitoring changes in waist circumference over time may be helpful, in addition to measuring BMI, since it can provide an estimate of increased abdominal fat even in the absence of a change in BMI. Furthermore, in obese patients with metabolic complications, changes in waist circumference are useful predictors of changes in CVD risk factors.

Measuring Your Waist Circumference

Measure your waist without holding the tape too tightly (or too loosely). As a rough guide, your waist is the narrowest part of your trunk, *or* approximately 1 inch above your belly button.

Waist Measurements - Healthy and Unhealthy

Women

- Waist circumference of over 31 inches (about 80cm) indicates slight health risk.
- Waist of over 35 inches (about 90cm) indicates substantially increased health risk.

Men

- Waist of over 37 inches (about 94cm) indicates slight health risk.
- Waist of over 40 inches (about 102cm) indicates substantially increased health risk.

Determining whether you are a pear or apple and learning about your body's composition are critical steps toward "taking charge" of your own health. Remember, it is your life and it is your health.