

An Easy to Use Body Fat Testing Guide and Calculator

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Introduction

Testing ones body fat is an important part of a quality bodybuilding program. Having knowledge of ones body fat can be used in determining ones progress and in calculations vital to a bodybuilder's diet (i.e., daily caloric intake). However, there are few guides available that provide clear and accurate instruction.

The easiest and most practical method of measuring ones body fat utilizes body fat calipers (see figure 1) to measure subcutaneous fat (fat directly beneath the skin) combined with good technique and simple math formulas.

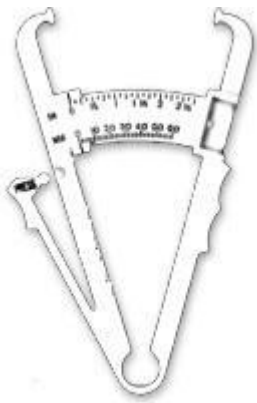


Figure 1

Body Fat Calipers

The goal of this guide is to inform readers on proper techniques used in the body fat testing, caliper method, so that they develop the skills necessary to produce accurate and precise results.

The HYPERplasia Challenge

On ABCbodybuilding.com, we regularly hold an 8 week bodybuilding competition, called the HYPERplasia Challenge. The Challenge allows all members of ABC regardless of age, sex, or goals to enter. Click [Here](#) for more information and to sign up now. You have to be a member of our forums to sign up for this. This is an easy, **free** process, which will allow you to ask questions to the top scientific minds in bodybuilding today. Click [Here](#) to sign up now! The current Challenge will last from **May 7th - July 2nd**. Good luck!

One important aspect of the challenge is that you must take caliper measurements. So studying this article is a pre-requisite for anyone who is considering entering the competition.

Using Body Fat Calipers

First, pick up the caliper using the thumb and forefinger of one hand (see figure 2). With your free hand, grasp a fold of skin, again using your thumb and forefinger, pull it away from the body, and slightly shake it to separate the skin and fat from muscle tissue. Now, grasp the pulled skin with the caliper, approximately 1/4-1/2 of an inch below the thumb and forefinger holding the skin. Next, hold the caliper in that position for 2-4 seconds, applying the complete force of the caliper. This time limit is to avoid skin fold compression, which can skew the results (Fleck, 1981; Plowman & Smith, 2003).

To assure the utmost reliability of your measurement, repeat this procedure 2-3 times, and take the average score. If the scores greatly deviate from one another, you may consider practicing this more, and then recording your body fat percentage, once you are able to improve your reliability.

Note that before you take the next measurement, you should rub the skin, and wait for a few seconds, so that the fluid can return to the area. It would also be a good idea to mark with a pencil where you took your measurement, so you can replicate it at the exact spot.

For those taking professional caliper readings, it is advised to measure 30-50 individuals who vary in body fat percentage, and then compare your measurements with an expert caliper measurer's readings of the same individuals, and calculate the reliability between the scores. Or, you could compare your measurements to valid methods such as hydrostatic weighing (Fleck, 1981).

Lastly, you should always take your body fat percentage at the same time of day, to assure the utmost validity. The morning is a great time, and before any workouts.

Other Measuring Techniques

The "gold standard" for body fat measurement is under water weighing (Fleck, 1981; Plowman & Smith, 2003), but this method is highly inconvenient. Calipers are typically more accessible to individuals. Further, if taken correctly, calipers yield a high concurrent validity, which is the degree to which the scores of the test are related to some other valid criterion standard available at the same time (i.e. hydrostatic weighing). In this context, body fat percentage as determined by calipers typically matches hydrostatic weighing (under water weighing) with an error of +-2-5% (Fleck, 1981; Plowman & Smith, 2003). Typically, calipers tend to underestimate body fat for obese individuals, and overestimate body fat for lean individuals. Accordingly, the most accurate measurement typically occurs in moderately lean individuals (Fleck, 1981).

Skin Fold Measurement Sites

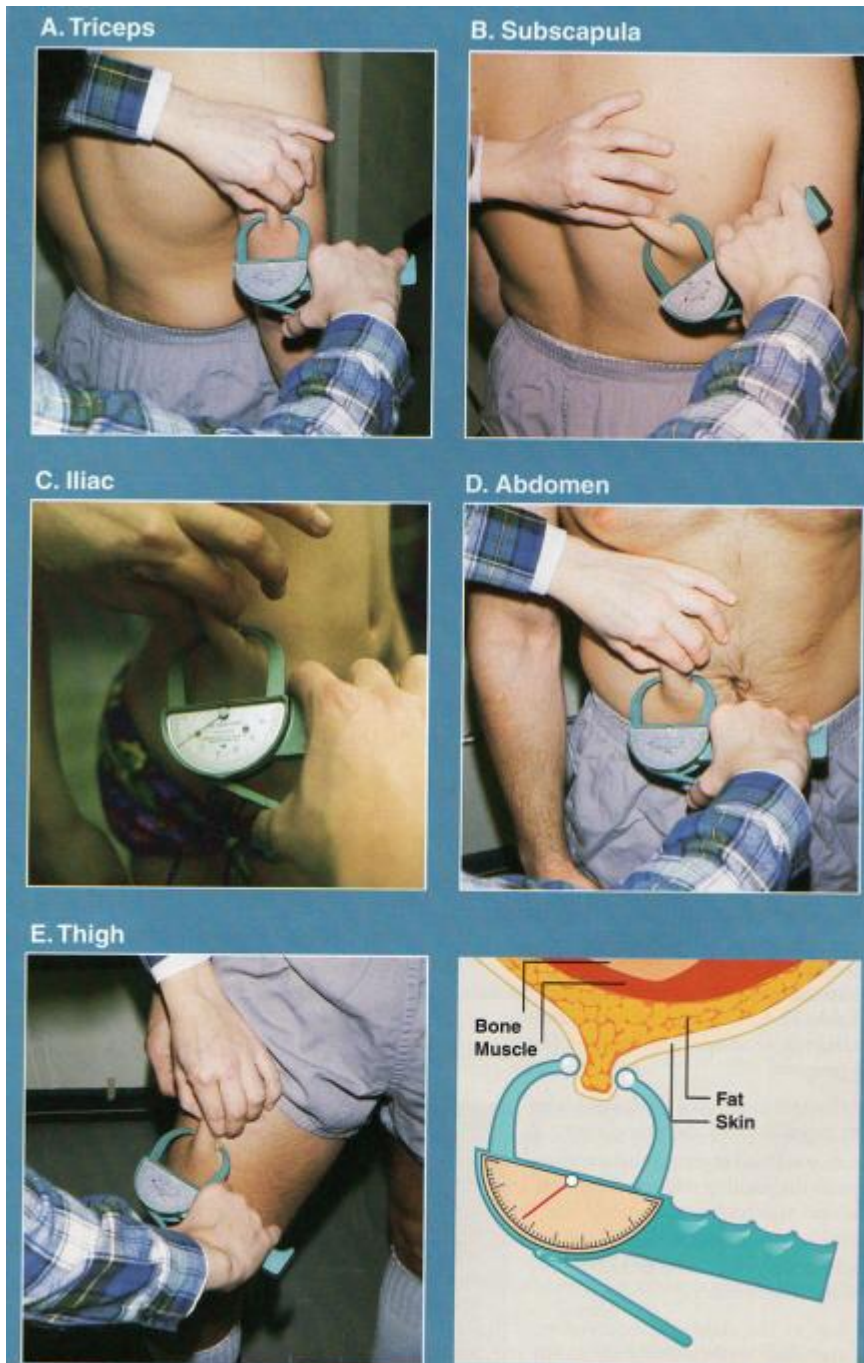
Many experts recommend 7 measurement sites (skin folds) as 3-point measurements are not as accurate, and 9-point tests yield results highly comparable

to 7-point tests (Plowman & Smith, 2003). This is also what is used for those competing in current and future HYPERTROPHY challenges.

Note, when taking these measurements, the individual should be in a relaxed position.

The 7 sites are as follows (see figure 2) (Fleck, 1981; Plowman & Smith, 2003):

1. Triceps – grasp a vertical fold of skin, on the posterior side of your arm (your triceps) at the midline. The measurement should simply be at the halfway mark between your shoulder and elbow.
2. Abdominal – Take another vertical skin fold one inch to the right of the umbilical cord (belly button).
3. Chest – this time, take a diagonal fold, with the long axis of the caliper directed towards the nipple of the chest. It should be measured mid-way between the anterior axillary fold (underarm) and nipple.
4. Thigh – take a vertical measurement at about the midline of the thigh; approximately half way the distance from the patella (knee cap) to the hip.
5. Suprailiac (iliac crest) – take an oblique measurement slightly above the hip bone, along the natural diagonal curve of the structure, where the oblique muscle is.
6. Midaxillary – grasp a vertical fold of skin, directly under the arm pit.
7. Subscapular – take an oblique measurement right below the inferior (bottom) edge of the scapula (the shoulder blade).



Adapted from Plowman & Smith, 2003

Figure 2

Skin Fold Measurements

Bringing it all together (calculating)

Once you have your skin fold numbers, you can plug in your measurements into the following equations.

First, calculate your body density (Db) with the following equation (Jackson & Pollock, 1985).

For men, use the following equation:

$$Db = 1.112 - (.00043499) (\text{sum of 7 skin folds}) + (.00000055) (\text{sum of seven skin folds squared}) - (.00028826) (\text{age})$$

For females, use the following equation:

$$Db = 1.097 - (.00046971) (\text{sum of 7 skin folds}) + (.00000056) (\text{sum of seven skin folds squared}) - (.00012828) (\text{age})$$

Once you have the body density, plug this into the following formula for your body fat percentage (Siri, 1961):

$$\text{Body fat \%} = [(4.95/Db) - 4.5] \times 100$$

Examples

Suppose a 25 year old male, has 7 measurements, all 5 mm in girth. He would simply plug this into the Db equation as such:

$$Db = 1.112 - (.00043499) (35) + (.00000055) (35^2) - (.00028826) (25)$$

$$Db = 1.090242601225$$

He would then plug in his body density into the body fat percentage equation as such:

$$\text{Body fat \%} = [(4.95/1.090242601225) - 4.5] \times 100$$

$$\text{Body fat \%} = 4.03 \%$$

Finally, to calculate total lean body mass and fat mass, simply take your body fat percentage, divide by 100 (in this case, that would add up to .0403), and multiply it by your body weight to find out how much total body fat you have. Then, subtract your total body fat, by your body weight, to find how much lean body mass you have. Thus, if this man weighed 200 pounds, he would have approximately 191.95 pounds of lean body mass, and 8.05 pounds of fat.

Easy to Use Calculator

Click here for an easy to use body fat calculator, [Body Fat Calculator](#).

Finding Calipers

Calipers are fairly easy to find. Various internet sites have them, as well as local fitness stores. If you have any problems finding them, feel free to ask in our online forums by clicking [Here](#).

Conclusion

Body fat caliper measurements are a great way to accurately monitor your progress. Hopefully, this guide will make the process smooth and effective for you.

If you have any questions, feel free to email me.

Keep it Hardcore,

Venom

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