

Arbitrary Categories

When a line drawn across a curve is read as a fact about your body

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Fault 3 of six · healthy-skepticism.com · September 2026

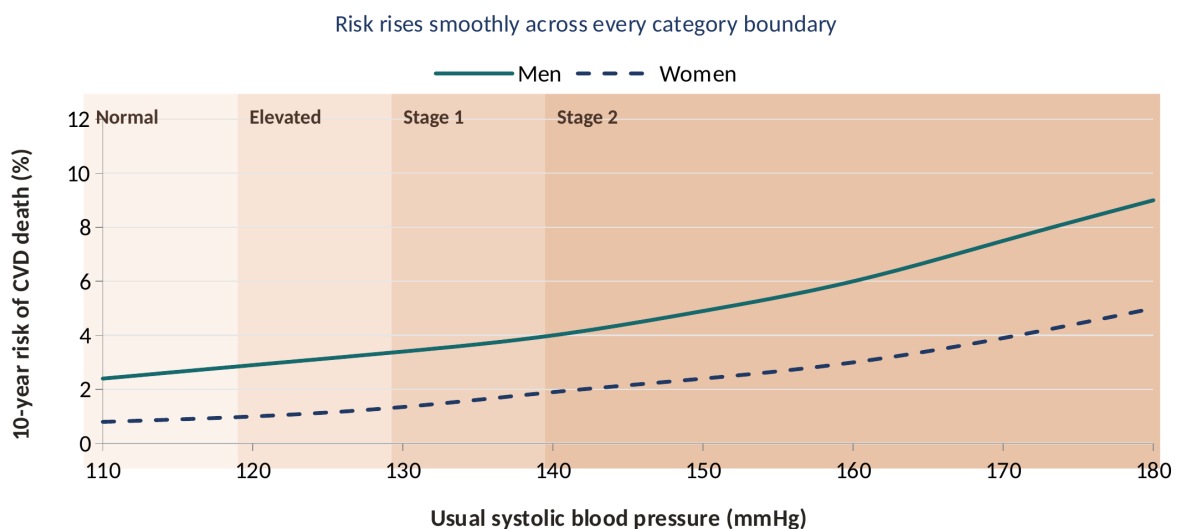
The fault

"Your blood pressure is elevated." The label lands like a diagnosis, and patients act on it. Yet nothing the doctor measured comes in categories. Pressure, weight, sugar, and cholesterol are continuous, and the body does nothing special at any particular value. The categories are not continuous. Normal ends and elevated begins at a single number, and a committee chose that number. It could have been drawn elsewhere, and often has been.

The fault is reading the box as the measurement: treating the label as a fact about your body rather than a decision rule someone drew across a curve. A healthy skeptic hears the label and asks whether his actual reading justifies the treatment, not whether it crossed a line. The example the course uses: how concerned should you be if your systolic blood pressure goes from 119 to 120?

The example: 119 to 120

Your systolic reads 120 this year. Last year it read 119. Nothing about you changed. The label did: 120 is where "elevated" begins under the 2017 guideline. Plot ten-year cardiovascular risk against usual systolic pressure and it rises smoothly across every category boundary. Normal, Elevated, Stage 1, and Stage 2 are drawn on top of a curve that does nothing at any of them. One millimeter of mercury moved you across a line. It did not move your risk.



Ten-year risk of cardiovascular death against usual systolic pressure, men and women. The curve does nothing at any boundary.

There is a second lesson in the same chart. One cutoff, applied to a man and a woman, sits on top of very different absolute risks. The line is the same for both; what it means is not.

SCORE risk charts, low-risk regions: Conroy RM et al. Eur Heart J 2003;24:987–1003. Category boundaries: Whelton PK et al. 2017 ACC/AHA hypertension guideline. Hypertension 2018;71:e13–e115.

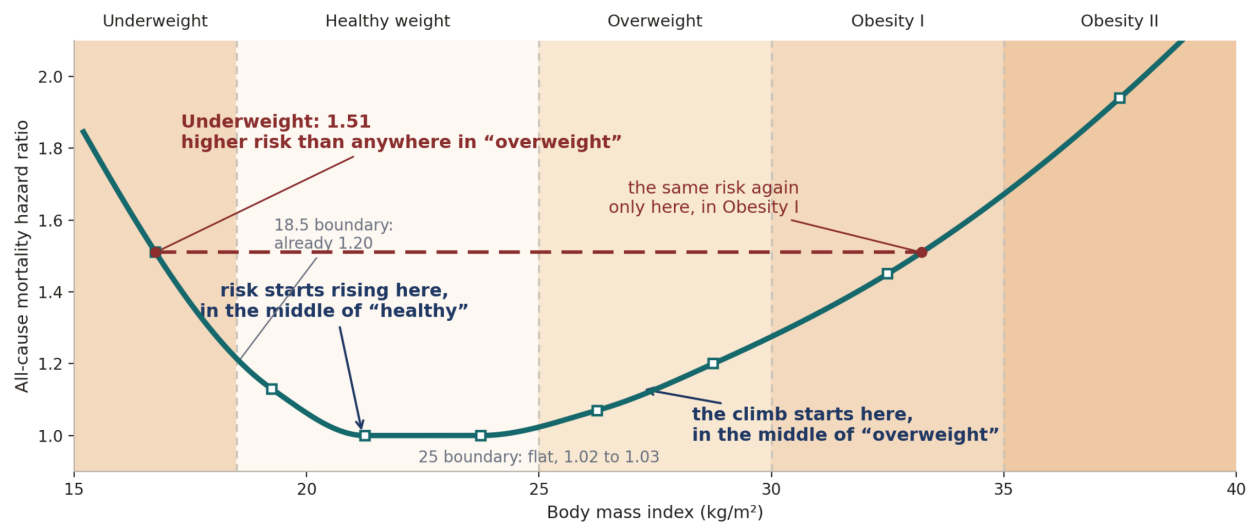
How the categories are set

The 2017 guideline moved the definition of hypertension from 140/90 to 130/80, and roughly 31 million American adults acquired the diagnosis overnight, on the same bodies they had the day before. The committee had reasons: trial evidence that treating to lower targets helped high-risk patients, and a wish to prompt earlier attention. Those are reasons to move a decision rule. They are not a change in anyone's physiology, and the guideline itself did not recommend medication for most of the newly labeled.

Muntner P et al. Potential US population impact of the 2017 ACC/AHA high blood pressure guideline. Circulation 2018;137:109–118.

A second case: the BMI boxes

The BMI categories have the same problem, in both directions. The line at 25, where "overweight" starts, sits on the flat bottom of the mortality curve. Crossing it moves the hazard ratio from about 1.02 to about 1.03, which is to say not at all. The line at 18.5, where "underweight" starts, is already at 1.20 and on the steep part of the curve. A BMI of 16.7 carries a hazard ratio of 1.51, higher than any point in the whole "overweight" band. You do not see that much risk again until well into "obesity." So the risk starts rising in the middle of "healthy weight" and again in the middle of "overweight." The lines sit where nothing happens.



The risk transitions sit in the middle of the categories; the boundaries sit where nothing happens.

Global BMI Mortality Collaboration, Lancet 2016;388:776–786. All-cause mortality hazard ratios relative to BMI 22.5–25, never-smokers; band-midpoint values, shape-preserving interpolation.

All-cause mortality against BMI. The curve turns inside the categories, not at their edges.

Global BMI Mortality Collaboration. Lancet 2016;388:776–786. Hazard ratios relative to BMI 22.5–25 in never-smokers.

Why categories exist, and why it happens

Categories exist for good reasons. A box tells a busy clinic who to look at twice. It makes a chart readable in three seconds. It lets a guideline be written at all. The trouble starts when the box is treated as a fact about the patient. A man one point over the line is treated, and treats himself, as a different kind of person from the man one point under it. The reasons are practical. A label is easier to bill, to code, and to put in a headline than a point on a curve.

Ask where you sit on the curve, not which side of the line you are on.

What to ask

- What is my risk at my actual measurement, rather than which box it falls in?
- Where does the curve turn, and is it anywhere near the line?
- What changed when the line moved: my body, or the rule?
- Is the recommendation for people at my number, or for people in my category?