

Action Unit 4 – Brow Lowerer

Figure 2-1 shows the three muscle strands that underlie this action. One strand runs obliquely in the forehead. It emerges near the root of the nose below the glabella and runs up and outward to a point of attachment in the forehead above the eyebrow. This strand, the most powerful of the three, pulls the eyebrows together and lowers the brow. Another strand runs more vertically. It emerges from the root of the nose below the glabella and fans out in the center of the forehead, where it attaches. A third strand runs from the glabella to the medial corner of the eyebrow. Typically these three strands act together, although there may be more of one strand than another involved in any particular action. We have carefully considered measuring these strands separately, but have concluded that doing so is replete with difficulties. For a discussion of the issues and how measuring the separate strands might be done, see the Investigator's Guide.

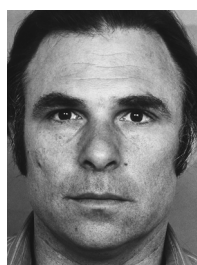
A. Appearance Changes due to AU 4

1. Lowers the eyebrow. In different instances it may be only the inner portion of the eyebrow that is lowered or it may be both inner and central portions that are lowered, or it may appear that the entire eyebrow is lowered.
2. Pushes the eye cover fold downwards and may narrow the eye aperture.
3. Pulls the eyebrows closer together.
4. Produces vertical wrinkles between the eyebrows, which may be deep. In some people the wrinkles between the eyebrows may not be vertical but at a 45 degree angle, or both angled and vertical. May also produce one or more horizontal wrinkles at the root of the nose. If the vertical, angled, or horizontal wrinkles are permanently etched, they deepen.
5. May produce an oblique wrinkle or muscle bulge running from the middle of the forehead above the middle of the eyebrow down to the inner corner of the brow, or a series of rippling bulges above and medial to the eyebrow center.

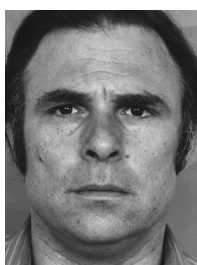
Sometimes AU 4 shows appearance changes 1 and 2 and almost no evidence of appearance changes 3 and 4; or the reverse. Either way, if the brows are lowered, drawn together or both lowered and drawn together, score AU 4.

Compare images 4i, 4ii and 0. The action is more subtle in 4i than 4ii. Compare 4i with 0 to see that the brow is both lowered and drawn together. Compare 4i with w4. Note the wrinkles between the brows are more angular than vertical in w4. The thumbnails below are merely reminders and an index of the relevant images but do not show the details of the appearance changes you need to know. Be sure to study the larger images by turning to the indicated page if you are reading a printed version, or clicking on the links if you are reading an online version. Inspect the video of 4.

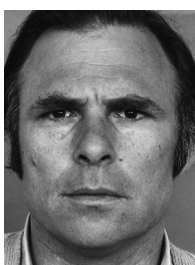
The page number links show the image or video in this frame, and thumbnails show them in your external viewer. The page number link next to the thumbnail caption shows the reference example image; the page number link preceding the “for score” label shows the complete FACS scoring commentary for the image.



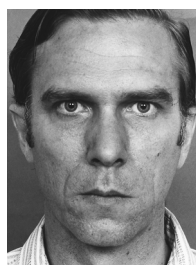
0 [page 465](#)
[page 381](#) for score



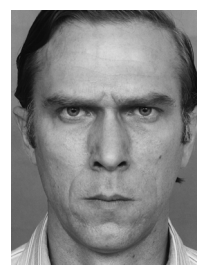
4i [page 466](#)
[page 382](#) for score



4ii [page 466](#)
[page 382](#) for score



w0 [page 465](#)
[page 382](#) for score



w4 [page 465](#)
[page 382](#) for score



[video 4](#)
[page 413](#) for score

B. How to do AU 4

This movement is easy for most people to do. Lower your eyebrows and pull them together. Try not to wrinkle your nose (if your nose is wrinkling, you are doing AU 9). If you are unable to make this movement so it looks like 4i or 4ii, turn to the description of AU 9 on [page 93](#). Make the nose wrinkling movement of AU 9, and watch what happens to your eyebrows. Notice that they come down and together. Now try to move your eyebrows without moving AU 9. Alternatively, imagine yourself puzzled with a problem that you can't figure out; you may make AU 4. If you are still unable to make this movement, use your fingers to push the skin on your face so you look like 4ii. Then try to hold that appearance when you take your fingers away.

Once you can make AU 4, try doing a weak version so that you look more like picture 4i than 4ii. Once you look like 4i, pull down and together harder so you look like 4ii.

C. Intensity Scoring¹ for AU 4

AU 4A

The appearance changes for AU 4 are sufficiently present to indicate AU 4, but are insufficient to score 4B (e.g., a *trace* of brow lowering and/or a *trace* of pulling together).

AU 4B

1. Inner and/or central portion of brow lowered *slightly*, pushing down or reducing visibility of medial portion of eye cover fold.
or
2. Brows pulled together *slightly*; if you do not see the movement, you must see a wrinkle or muscle bulge between brows. If a wrinkle or muscle bulge is permanent (in the neutral face), it must increase *slightly*.

(Note that in 4i, 4ii and w4 both the brow lowering and pulling together criteria are present.)

AU 4C

Both the brow lowering and pulling together of the criteria for 4B are present and at least one is *marked*, e.g., one step greater than *slight*, but the evidence is less than the criteria for 4D.

AU 4D

Both the brow lowering and pulling together of the criteria for 4B are present and at least one is *severe*, but the evidence is less than the criteria for 4E.

AU 4E

Brow pulling together or lowering is *maximum*.

1. See Introduction to Intensity Scoring on [page 8](#) for definition of terminology used in describing the intensity scoring of an AU.

Reference: AU 4

Actions of Special Relevance to AU 4

Certain head and eye movements or position changes have special significance in regard to AUs 4, 5, or 7, and you should carefully inspect the face for these actions when you score 4, 5, or 7, even when not otherwise scoring head/eye positions. Use the definitions of these AUs when AUs 4, 5, and 7 occur, either separately or in combination with other AUs.

AU	Summary of AU	See Description for Details
M69	Head and/or Eyes Look at Other Person	“Eye Movement Codes M68, 69, and M69” on page 321
69	Eyes Positioned to Look at Other Person	“Eye Movement Codes M68, 69, and M69” on page 321

Action Units or Combinations That Change the Intensity Scoring for Scoring AU 4

Problematic Combination of AUs	Target Action of Adjusted Criteria	Use These Criteria or See the Section Indicated
1+2+4	To score 4B with 1+2	see 1+2+4secC on page 57
1+2+4+6	To score 4B with 1+2+6	see 1+2+4secC on page 57
1+2+4+9	To score 4B with 1+2+9	see 1+2+4secC on page 57
1+4+6	To score 4B with 1+6	see 1+4 entry below
1+4	Criteria for 4B in 1+4:	Inner corners of the eyebrows pulled <i>slightly</i> closer together than in neutral face; and, one of the following two changes: <i>Slight</i> wrinkling or muscle bunching between the eyebrows. If this sign is evident in the neutral face, then it must increase <i>slightly</i> . or, <i>Slight</i> oblique wrinkle or bulge running from the mid-forehead to inner corner of eyebrow. If present in neutral, it must increase <i>slightly</i> .
4+6	Criteria for 4B in 4+6:	Both criteria 1 and 2 for 4B described in 4secC alone are required
4+9	Criteria for 4B in 4+9:	Since 9 also lowers the eyebrow, and may also draw the eyebrows together to some extent, or makes it difficult to see the pulling together of the eyebrow by AU 4: Inner corners of the eyebrows pulled together <i>markedly</i> , or, Central portions of the eyebrow and skin above the eyebrow pulled together <i>markedly</i> .