



Action Unit Combinations – 10+15, 10+17, 15+17, 10+15+17

These four AU combinations involve the combinations possible among the three single AUs 10, 15, and 17. Rather than describe each separately, it is easier for you to learn all four combinations at the same time. Have before you the images of these four combinations and the images of the single AUs 10, 15 and 17 as you study this section.

A. Appearance Changes due to AU Combinations 10+15, 10+17, 15+17, 10+15+17

The changes in appearance for each of the four combinations additively combine the appearance changes associated with the single AUs that are involved. Here is a repetition of the appearance changes for 10, 15 and 17.


AU 10

1. Raises the upper lip. Center of upper lip is drawn straight up, the outer portions of upper lip are drawn up but not as high as the center.
2. Causes an angular bend  in the shape of the upper lip.
3. Pushes the infraorbital triangle up, and may cause the infraorbital furrow to wrinkle, or deepen if already evident in neutral.
4. Deepens the nasolabial furrow and raises the upper part of this furrow producing a shape as . In some people, this shape is permanently creased and is deepened by the action of 10.
5. Widens and raises the nostril wings.
6. When the 10 action is strong, the lips usually part. This parting often does not occur with 10+17, or 10+15+17 because a moderate 17 keeps the lips closed.

AU 15

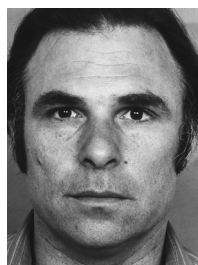
7. Pulls the corners of the lips down.
8. Changes the shape of the lips so they are angled down at the corners and usually somewhat stretched horizontally.
9. Produces some pouching, bagging, or wrinkling of the skin below the lips corners, which may not be apparent unless the action is strong.
10. May flatten or cause bulges to appear on the chin boss, may produce a depression medially under the lower lip.
11. If the nasolabial furrow is permanently etched, it deepens and may appear pulled down or lengthened.
12. If AU 6 or AU 12 combines with 15 (or 10+15, 15+17, 10+15+17), confusion may arise whether it is 6+15 or 12+15. Later in Chapter 6, when you learn AU 12, you will also learn how to score 12+15 and 12+15+17 and how to make the difficult distinctions among AUs 6, 12, and 15 and their combinations.

AU 17

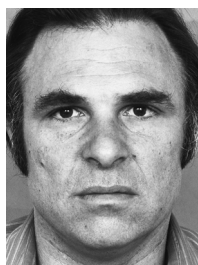
13. Pushes the chin boss upward.
14. Pushes the lower lip upward.
15. May cause wrinkles to appear on the chin boss as skin is stretched, and may produce a depression medially under the lower lip.
16. Causes shape of mouth to appear  or this inverted-U shape to increase if present in neutral.
17. If the action is strong, the lower lip may protrude.

Notice that appearance changes 1 - 5 are apparent in images 10+15, 10+17, and 10+15+17 but absent in 15+17 or 6+15+17. Notice that appearance changes 7 - 11 are apparent in 10+15, 10+15+17, 15+17, and 6+15+17 but are absent in 10+17. Notice that appearance changes 13 - 17 are apparent in 10+17, 10+15+17, 15+17, and 6+15+17 but are absent in 10+15. In all of these combinations – 10+15, 10+17, 15+17 and 10+15+17 – the corners of the mouth angle down. This

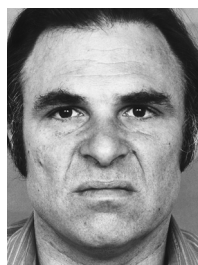
angle is due to the effect of appearance change 2 from AU 10, appearance changes 7 and 8 from AU 15, or appearance change 16 from AU 17. Compare the images of 15+17 and 6+15+17, noting the addition of the signs of 6. Later in Chapter 6 when 12+15+17 is discussed you will learn how to distinguish 6+15+17 from 12+15+17. Inspect the video of 10+15, 10+17, 15+17 and 10+15+17.



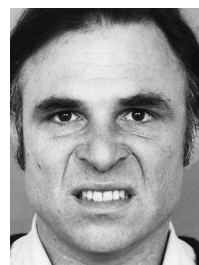
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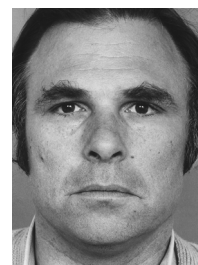
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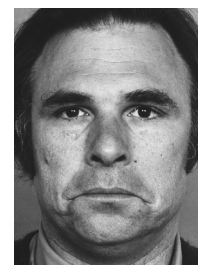
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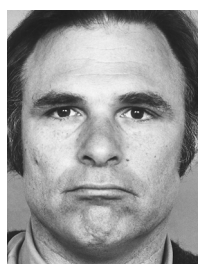
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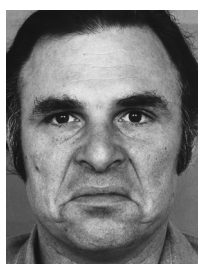
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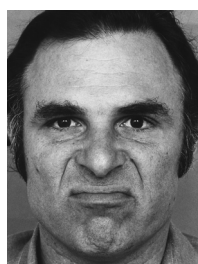
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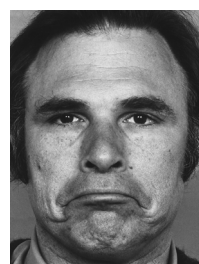
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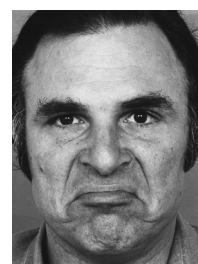
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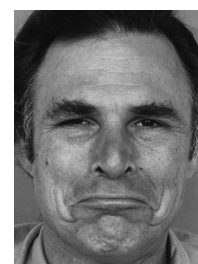
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15+17 [page 480](#)
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10+15+17
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6+15+17 [page 480](#)
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[video 10+15](#)
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[video 10+17](#)
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[video 15+17](#)
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B. How to do AU Combinations 10+15, 10+17, 15+17 and 10+15+17

Follow the instructions for AU 10, AU 15, and AU 17, repeated below, and combine the individual AUs to do 10+15, 10+17, 15+17 and 10+15+17.

AU 10 (repeated from [page 95](#)): This movement is easy to make. Be careful not to involve AU 9 – no nose wrinkling. Just lift your upper lip straight up to show your upper front teeth. Practice weak and strong actions.

AU 15 (repeated from [page 101](#)): Pull your lip corners downwards. If you are unable to do AU 15, place your fingers above the lip corners and push downwards, noting the changes in appearance. Now, try to hold this appearance when you take your fingers away.

AU 17 (repeated from [page 98](#)): This movement is easy to do. Push your lower lip upwards. Note the wrinkles in your chin, and the change in the shape of the lower lip. If you are unable to make this movement, place your fingers on your chin about in the middle and push the skin upwards, noting the changes that occur. Now try to hold this appearance when you take your fingers away.

C. Intensity Scoring for AU Combinations 10+15, 10+17, 15+17, 10+15+17

The intensity criteria for AUs 10 and 17 are unchanged in any of these combinations and are repeated below. The criteria for AU 15 are altered significantly when AU 15 is scored in combination with AUs 10 or 17. The change in the angle of the lips, included in 15secC2, is no longer relevant, since that change can occur because of the action of AU 17 or AU 10, not due only to AU 15. Also, when 15 and 17 co-occur, the guidelines are a little higher for each intensity level of 15, as opposed to 10+15, because 17 will add to the changes of 15. Below are intensity criteria for AU 15 when in combination with AUs 10 and/or 17 when the AUs are at the same intensities. Of course, any combination of intensities can occur for AUs 10, 15, and 17 in the combinations 10+15, 10+17, 15+17, and 10+15+17, and you have to assign intensity scores based on analysis of each AU independently.


AU 10A

The appearance changes for AU 10 are sufficiently present to indicate AU 10, but are insufficient to score 10B (e.g., a *trace* of pouching or bulging of inner corner of the infraorbital triangle or *trace* of increase).

AU 10B

1. *Slight* pouching or bulging of inner corner of the infraorbital triangle. See Figure 4-2. If the pouch is permanent, it must increase *slightly*. If the pouch is ambiguous, but you can see the center of the upper lip raised and it is not due to 6, 9, 11, or 12, you can score 10.

If you did not see the movement, it must also meet an additional criterion:

2. *Slight* deepening of the upper portion of nasolabial furrow which takes on characteristic  shape. If this shape is permanent, it must increase *slightly*.
or
3. Center of upper lip raised *slightly*, causing an angular bend in the shape of the upper lip.

AU 10C

At least *marked* evidence of pouching or bulging of inner corner of the infraorbital triangle, with lip raising evident and at least some of other appearance changes in 10secA (1) through (5) are present, but the evidence is less than the criteria for 10D.

AU 10D

At least *severe* evidence of pouching or bulging of inner corner of the infraorbital triangle with all appearance changes in 10secA (1) through (5) present, but the evidence is less than the criteria for 10E.

AU 10E

Appearance changes in 10secA (1) through (5) are all present and *extreme* to *maximum*.

AU 17A

The appearance changes for AU 17 are sufficiently present to indicate AU 17, but are insufficient to score 17B (e.g., a *trace* of lower lip pushed up and/or *trace* of chin boss wrinkling).

AU 17B

1. *Slight* evidence of lower lip push up beyond the movement necessary to close the lips; may include lip protrusion, or depression in medial area under the red part of the lip. The lower lip may slide in front of the upper lip and expose more of the red part of the lip than usual.
or
2. *Slight* chin boss wrinkling or puckering, and upward movement of chin boss. If the chin boss is permanently wrinkled, it must increase *slightly*. AU 15 may cause similar chin wrinkling, but they differ in appearance. See 15 vs. 17 in subtle differences.

AU 17C

The pushing up of the lower lip and the wrinkling/puckering of the chin boss are both evident and at least one is *marked*, but the evidence is less than the criteria for 17D.

AU 17D

The pushing up of the lower lip and the wrinkling/puckering of the chin boss are both evident and at least one is *severe*, but the evidence is less than the criteria for 17E.

AU 17E

The pushing up of the lower lip and the wrinkling/puckering of the chin boss are both in the *maximum* range.

The intensity criteria for 15 are altered in the combinations with 10 and/or 17.

AU 15A in Combination 10A+15A

The appearance changes for AU 15 are sufficiently present to indicate AU 15, but are insufficient to score 15B in 10+15 (e.g., a *trace* of increase in pouching, bagging, or wrinkling below the lip corners).

AU 15B in Combination 10B+15B

1. Lip corners pulled down *slightly*.
or
2. *Slight* pouching, bagging or wrinkling below the lip corners. If pouching is permanent, it must increase *slightly*.

If you do not see the movement, criterion 2 must be used.

AU 15C in Combination 10C+15C

Appearance changes 7 (lip corners pulled down), 8 (changed, inverted-U shaped lip), and 9 (pouching, bagging, or wrinkling below lip corners) are all present in 10+15C and at least one is *marked* or greater, but the evidence is less than the criteria for 15D in 10+15.

AU 15D in Combination 10D+15D

Appearance changes 7 (lip corners pulled down), 8 (changed, inverted-U shaped lip), and 9 (pouching, bagging, or wrinkling below lip corners) are all present and at least *slight*, and at least one is *severe* in 10+15D, but the evidence is less than the criteria for 15E in 10+15.

AU 15E in Combination 10E+15E

Appearance changes 7 (lip corners pulled down), 8 (changed, inverted-U shaped lip), and 9 (pouching, bagging, or wrinkling below lip corners) are all present and at least *marked*, and at least one is *extreme* in 10+15E.

If you do not see the movement, the evidence of pouching, bagging, or wrinkling below the lip corners must be relied upon rather than the pulling of the corners.

AU 15A in Combinations 15A+17A and 10A+15A+17A

The appearance changes for AU 15 are sufficiently present to indicate AU 15, but are insufficient to score 15B (e.g., a *slightly* more downward curvature than in 17 alone).

AU 15B in Combinations 15B+17B and 10B+15B+17B

1. Lip corners pulled down *slightly*.
or
2. The curve of the lips is *markedly* more down than it is in 17 alone or 10+17; if there are bags, pouches or wrinkles, they are much more evident than it is from 17 alone or 10+17.

If you do not see the movement, criterion 2 (*markedly* more downward curve) must be used.

AU 15C in Combinations 15C+17C and 10C+15C+17C

Appearance changes 7 (lip corners pulled down), 8 (changed, inverted-U shaped lip) and 9 (pouching, bagging, or wrinkling below lip corners) are all present and at least one must be *pronounced* in 10+15C+17 or 15C+17, but the evidence is less than the criteria for 15D in 15+17.

AU 15D in Combinations 15D+17D and 10D+15D+17D

Appearance changes 7 (lip corners pulled down), 8 (changed, inverted-U shaped lip), and 9 (pouching, bagging, or wrinkling below lip corners) are all present and at least *marked* and at least one is *extreme* in 10+15D+17 or 15D+17, but the evidence is less than the criteria for 15E in 15+17.

AU 15E in Combinations 15E+17E and 10E+15E+17E

Appearance changes 7 (lip corners pulled down), 8 (changed, inverted-U shaped lip), and 9 (pouching, bagging, or wrinkling below lip corners) are all present and at least *severe* and at least one is *maximum* in 10+15E+17 or 15E+17.