

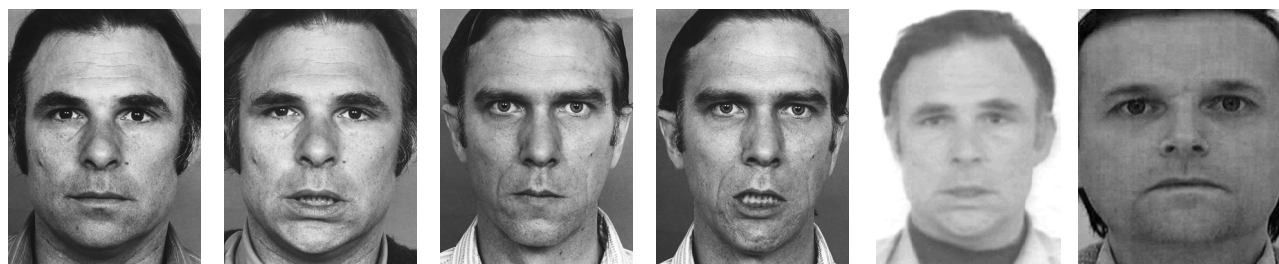
## Action Units 16 and 16+25 – Lower Lip Depressor

Figure 4-1 shows that the muscle underlying AU 16 emerges from either side of the chin and runs upwards to a point of attachment in the lower lip. In AU 16 the lower lip is pulled downwards towards the chin.

### A. Appearance Changes due to AUs 16 and 16+25

1. Pulls the lower lip down.
2. Stretches the lower lip and pulls it somewhat laterally.
3. May cause the lower lip to protrude or flatten.
4. Usually parts the lips (scored 16+25) exposing more of the lower teeth, usually including the roots of the teeth, and in a strong action the lower gum is exposed as well. Sometimes a 16 does not part the lips and is scored 16 alone.
5. Stretches the chin boss laterally and down, flattening the skin over the chin boss, and sometimes causing wrinkles to appear over the chin boss.
6. In some people, may cause wrinkle to appear directly below the lower lip.

The images, video, and descriptions deal with AUs 16+25. Usually, when there is an action of 16 the lips are parted and scored as 16+25, 16+25+26, or 16+25+27. If there is a weak action of 16 and the lips are sticking together, the lip lowering may be insufficient to part the lips. In those instances score as 16, not 16+25. Compare the images of 16+25 and w16+25. Note that in 16+25 the chin appears more flattened and stretched while in w16+25 the chin appears more wrinkled. Also note that the crease below the lower lip is more evident in 16+25 than w16+25. And, there is more asymmetry in the lowering of the lip and less lateral stretching in w16+25. Inspect the 16+25 videos, and read the commentary in Appendix II. Video 16+25ii shows that on some people, the action 16 can be quite apparent while barely, if at all, parting the lips.



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video 16+25i  
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video 16+25ii  
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### B. How to do AU 16 and 16+25

With your mouth closed, and your teeth together but not clenched, pull your lower lip straight down so that the center of your lip is lowered to show the lower front teeth, as though baring your teeth to check how clean and bright they are. If you are still unable to do AU 16, place your fingers below the center of your lower lip on either side of your chin boss and pull down. Then try to maintain this appearance when you take your fingers away. Try to detect the action of 16 before it parts your lips (you may be unable to do this if your lips part when you merely relax your lips). Also, try to do 16+26 and 16+27, noting how the appearance changes for AU 16 remain the same, but are added to those of AU 26 or 27. To do these combinations, perform the AU 26 or 27, then add the AU 16, scored 16+25+26 and 16+25+27, respectively.

### C. Intensity Scoring for AU 16

The intensity of AU 16 is described below for actions where 16 is alone or with AU 25, but not in combination with AUs 12, 18, 20, 22, or 23 which have an effect on the lower lip; for these exceptions, see the Reference table below. For convenience, the unchanged intensity criteria for 25 are repeated below.

#### AU 16A

The appearance changes for AU 16 are sufficiently present to indicate AU 16, but are insufficient to score 16B (e.g., a *trace* of the lower lip, skin below the lower lip, or chin boss actively pulled down, not merely a passive lip part).

#### AU 16B

1. The lower lip is pulled *slightly* down and *slightly* laterally. Also, the lower lip is *slightly* flattened or *slightly* protruded. The lowering of the lip must be more than just the movement which occurs when the lips simply part without being pulled by AU 16.  
or,
2. The skin below the lip is pulled down and laterally *slightly*  
or,
3. The chin boss is pulled down. Be careful not to confuse this change in the chin with the changes due to AU 15, or with chin movements due to moving the jaw.

If you did not see the lip move down and laterally, do not score 16B without parted lips (AU 25). To score 16B+25 (without 12, 18, 20, 22, or 23) if movement is not observed:

1. criterion 1 above,  
and
2. the lower gum is revealed across the entire row of front teeth.

#### AU 16C

The pulling downwards and laterally of the lip and skin below the lip is *marked* and both criteria 1 and 2 listed for 16B are *marked*, but the evidence is less than the criteria for 16D. (16C means 25 will probably also be scored.)

#### AU 16D

The pulling downwards of the lip and skin below the lip is *severe*. All criteria listed for 16B are present and at least two are *severe*, but the evidence is less than the criteria for 16E. (16D means 25 will probably also be scored.)

#### AU 16E

The pulling downwards of the lip and skin below the lip is in the *maximum* range. (16E will most likely also be scored with 25.)

#### AU 25A

When the jaw is shut, the appearance changes for AU 25 are sufficiently present to indicate AU 25, but are insufficient to score 25B (e.g., a clear opening between the lips that is less than 2 millimeters, but you can see no teeth).

When the jaw is lowered by AU 26 or 27, score 25A when actions that act to move the lips together have reduced the lip separation at least *severely* from the separation produced by the jaw opening itself.

In either case, if you are uncertain that the lips are parted, do not score 25A.

**AU 25B**

There are two alternative criteria for scoring 25B when the jaw is shut:

1. Teeth show - you can see teeth without doubt. The sight of but one part of one tooth is sufficient, but you must be certain that you see a tooth.  
or
2. Space between lips – must be at least 2 millimeters (the thickness of 2 quarters, an American coin) between the lips.

When the jaw is lowered, use the intensity score of B to indicate that lip uniting actions are reducing the lip separation at least *slightly* from what they would otherwise be, given the extent of jaw lowering.

**AU 25C**

If the teeth remain together, i.e., no jaw drop can be detected, the increased lip separation from the criteria for 25B likely comes from another lip separating action or actions and must be a *marked* or *pronounced* departure from the B criteria. For example, you might score a 25C if there is a moderate action of AU 10 or AU 16 (or other lip parting action) or a small action of both 10 and 16 that parts the lips at least *markedly* more than the criteria for 25B, but less evidence than the criteria for 25D.

If the jaw is lowered by AU 26 or 27 to separate the lips, and the separation is not increased more than a *trace* by other lip separating actions or decreased more than a *trace* by lip constricting actions, score 25C. The intensity score of C for AU 25 represents the lip separation controlled virtually entirely by the jaw lowering, the lips otherwise remaining relaxed or minimally affected by other muscles pulling them open or constricting them, regardless of the absolute distance between the lips. Use the relative position of the upper lip to the upper teeth and the lower lip to the lower teeth as a guide to whether the lip separation is more or less than the jaw lowering alone produces. If other muscles act to constrict the lips, consider scoring B or A; if they act to separate the lips, consider scoring D or E.

**AU 25D**

When there is no jaw lowering and the lips part due to other lip separating actions, the lip separation must be *severely* greater than the criteria for 25B to assign a D intensity code to AU 25. Thus, when the teeth are together, lip parting actions other than jaw lowering, such as AU 10 and/or 16, must be pulling the lips apart at least *severely* beyond the B criteria, but less evidence than the criteria for 25E.

When the jaw is lowered, assign a D intensity score to AU 25 when these same lip lowering and raising actions are separating the lips at least *slightly* more than they would be from the jaw lowering alone, but not more than the criteria for the E intensity score. A *slight* departure from the opening caused by the jaw lowering might result from a lip lowering action, a lip raising action, or both.

**AU 25E**



Like the other intensities of AU 25, the E intensity is not intended to reflect the absolute maximum possible separation of the lips, but rather the maximum possible separation given the degree of jaw lowering, if any. When the teeth remain together, score an E intensity when lip parting actions, such as AUs 10 and 16, separate the lips at least *extremely* or near *maximum* by both lowering the lower lip and raising the upper lip, so that the lips are separated about as much as possible.

**Reference: AU 16**

When AU 16 is in combination with AUs that affect the lower lip, some AUs (12 and 20) stretch the lips laterally so that the stretching of the lip cannot be used as a sign of 16. Other AUs (18+25, 22+25, 23+25) expose the lower teeth and/or gum; therefore, that sign cannot be used as the basis for scoring 16. In many instances when more than one of these AUs that interact with AU 16 are combined, it is difficult to determine if 16 is present or not. For combinations of AU 16 with 12+18, 12+22, 12+23, 18+20, 18+23, 20+22, 20+23, 22+23, it is difficult to see the AU 16. AUs 32, 34, and 35 also make

16 difficult to detect. Look for the downward pull of the middle portion of the lower lip and use this sign in determining presence and intensity.

Action Units or Combinations That Change the Intensity Scoring for AU 16

Problematic Combination of AUs	Target Action of Adjusted Criteria	Use These Criteria or See the Section Indicated
12+16+20+25	To score 16B with 12+20+25	Use the criteria for 16+20+25 in this table below.
12+16+23+25	Criteria for 16 in 12+16+23+25, or 26 or 27	Discount exposure of the lower teeth and gums as a sign of 16, which can also result from the lip retraction of AU 20 and the lip tightening of AU 23, such that virtually the full length of the lower front teeth should be seen to indicate 16's presence, e.g., some lower gum is exposed, when using this criterion alone. Rely instead on seeing the pulling downwards of the lower lip, skin below the lip, and the chin boss as clues to 16.
12+16+25 12+16+25+26 12+16+25+27	Criteria for 16 in 12+16+25, 12+16+25+26, or 12+16+25+27	<p>Use as indications 16's presence:</p> <p>a. Almost the entire tooth surface of the lower front teeth in the center is exposed.</p> <p>or,</p> <p>b. The shape of the lower lip is changed by the pulling down of 16 so that instead of  it becomes more like  ; and there is more of the lower teeth exposed than in 12+25 or 12+25+26 even if less than criterion a. above as long as you see the lip move down.</p> <p>Discount lateral stretching of the lower lip and skin below the lip as signs of 16, which can also result from the lip retraction of AU 12, such that when using this sign to detect 16 you see:</p> <p>c. The skin covering the chin has been <i>slightly</i> pulled down and <i>slightly</i> stretched laterally. Do not use this criterion if the stretch of the skin over the chin is just lateral, as a lateral upward pull is also caused by a strong 12.</p>
16+18+25	Criteria for 16B in 16+18+25, 26 or 27	<p>AU 18 changes the shape and position of the lip so that when scoring the presence of AU 16, require greater evidence of lip lowering as a sign of 16, such that for the B intensity use the criteria:</p> <p>a. <i>Marked</i> lowering of the lip, laterally stretching and flattening the lower lip.</p> <p>or,</p> <p>b. <i>Slight</i> lowering of the lip, laterally stretching and flattening the lower lip <u>and</u> <i>marked</i> pulling of the skin below the lower lip in a downward and lateral direction.</p>

16+20+25	Criteria for 16B in 16+20+25	<p>Discount exposure of the lower teeth and gums as a sign of 16, which can also result from the lip retraction of AU 20, such that to indicate 16's presence:</p> <p>a. Almost the entire surface of the lower, center, front teeth is exposed.</p> <p>Discount lateral stretching of the lower lip as a sign of 16, which can also result from the lip retraction of AU 20, such that to indicate 16's presence:</p> <p>b. The chin boss is pushed down <i>slightly</i>: (lateral stretch cannot be used because 20 produces that same appearance).</p> <p>Use either criterion a or b above to score 16B in 16+20+25.</p>
16+22+25	Criteria for 16B in 16+22+25, 26 or 27	<p><i>Marked</i> lowering of the lip, laterally stretching and flattening the lower lip.</p> <p>or,</p> <p><i>Marked</i> pulling of the skin below the lower lip in a downward and lateral direction and depression of the chin boss.</p>
16+23+25	To score 16B with 23+25	See 16+18+25 in this table above.