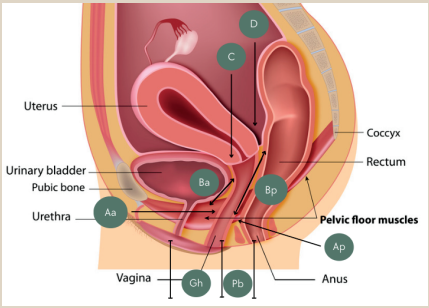
Pelvic Organ Prolapse Quantification (POP-Q)



The POP-Q is an exam used to stage pelvic organ support

- All measurements, except total vaginal length (TVL) are measured at maximal valsalva
- The hymen is a fixed point of reference and represents zero
- Points above the hymen are negative numbers and points below the hymen are positive numbers

Measuring Points

Aa	Anterior vaginal wall 3cm proximal to the external urethral meatus. Range: -3 to +3cm
Ba	The most distal position of the remaining upper anterior vaginal wall. Range: -3cm (no POP) to ≥ 3cm
C	The most distal edge of the cervix or vaginal cuff
D	Posterior fornix (not applicable if post-hysterectomy)
Ap	Posterior vaginal wall 3cm proximal to the hymen. Range: -3cm to +3cm
Bp	The most distal position of the remaining upper posterior vaginal wall. Range: -3cm (no POP) to ≥ 3cm

Genital Hiatus (GH) - Measured from the middle of the external urethral meatus to the posterior midline hymen
Perineal body (PB) - Measured from the posterior margin of GH to the middle of the anal opening
Total Vaginal Length (TVL) - Depth of the vagina when point D or C is reduced to normal position

POP-Q Staging Criteria

Stage 0	Stage 0: No prolapse is demonstrated. Aa, Ap, Ba, Bp = -3cm
Stage I	The most distal portion of the prolapse is more than 1cm above the level of the hymen. Leading edge ≤ -1cm but ≥ -3cm
Stage II	The most distal portion of the prolapse is 1cm distal or proximal to the level of the hymen. Leading edge ≥ -1cm and ≤ +1cm
Stage III	The most distal portion of the prolapse is more than 1cm beyond the plane of the hymen but at least 2cm less than the total vaginal length. Leading edge > -1cm but < (TVL -2cm)
Stage IV	Complete eversion or eversion at least within 2 cm of the total length of the lower genital tract is demonstrated. Leading edge ≥ (TVL - 2cm)

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Reference: 1. Haylen BT, Maher CF, Barber MD, Camargo S, Dandolu V, Digesu A, et al. An International Urogynecological Association (IUGA)/International Continence Society (ICS) joint report on the terminology for female pelvic organ prolapse (POP). International urogynecology journal. 2016;27(2):165-94.

GH and PB measurements - What do they tell us?

Hiatal Ballooning and Pelvic Organ Prolapse Risk

The dimensions of the levator hiatus (LH) has been shown to be strongly correlated with signs and symptoms of prolapse (1,2). A 2012 study by Khunda et al. found that GH + PB has the highest correlation with ultrasound assessment of levator hiatus, compared with GH or PB alone.

Using the BIEN POP-Q Measuring Sticks we can take a GH + PB measurement to look at a persons risk factors for prolapse, prolapse progression and possible levator defect.

Can GH predict POP prior to it developing?

A study in 2019 by Handa et al. concluded that a GH over >3cm represents a high risk of developing POP suggesting that GH measurements may be able to predict the likelihood of POP development over a 5-10 year period. They also found that if an individuals GH is increasing by >0.5cm/5yr they are more likely to develop POP.

GH and PB measurement:

Genital Hiatus (GH) - Measured from the middle of the external urethral meatus to the posterior midline hymen
Perineal body (PB) - Measured from the posterior margin of GH to the middle of the anal opening

The following GH + PB measurements and their corresponding level of hiatal ballooning (3):

- <7 cm= normal
- 7-7.99= mild ballooning
- 8-8.99= moderate ballooning
- 9-9.99= marked ballooning
- >10 cm = severe ballooning

** >8.5 cm is associated with levator avulsion

PB length and perineal tear risk factors:

It is suggested that a shortened perineal body (PB) length of <3cm may increase the risk of a 3rd or 4th degree perineal tear during vaginal delivery (5). Measuring an individuals perineal body length with BIEN POP-Q Measuring Sticks during pregnancy, may assist an individual in their birth choices related to the pelvic floor and their chances of significant perineal trauma.

References:
(1) Gerges, B., et al. (2013). "How to determine "ballooning" of the levator hiatus on clinical examination: a retrospective observational study." Int Urogynecol J 24(11): 1933-1937.
(2) Ow, L. L., et al. (2019). "Should Genital Hiatus/Perineal Body Be Measured at Rest or on Valsalva?" Female pelvic medicine & reconstructive surgery 25(6): 415-418.
(3) Khunda, A. M., et al. (2012). "Can ballooning of the levator hiatus be determined clinically?" Am J Obstet Gynecol 206(3): 246.e241-246.e244.
(4) Handa, V. L., et al. (2019). "Longitudinal changes in the genital hiatus preceding the development of pelvic organ prolapse." American journal of epidemiology 188(12): 2196-2201.
(5) Djusad, S., et al. (2021). "Relationship between Perineal Body Length and Degree of Perineal Tears in Primigravidas Undergoing Vaginal Delivery with Episiotomy." Obstetrics and Gynecology International 2021.