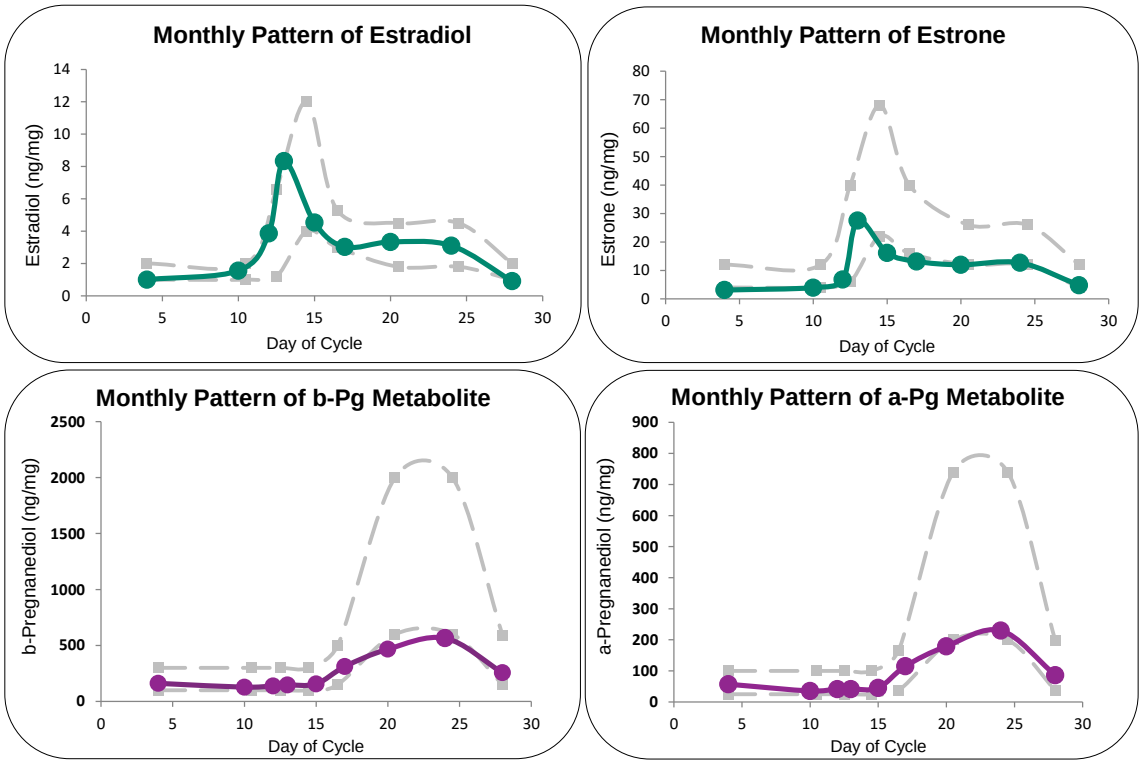
Cycle Mapping Results

Name: Cycle Map Case
Provider: Precision Analytical
Accession # 972341

D.O.B. 1/1/1990
Collection Dates
12/6-12/27-2020

Estrogen (E) patterns can be seen below in green. Progesterone (Pg) patterns can be seen below in purple. Normal ranges are within the gray dashed lines. See page 2 for more information.



All values given in ng/mg creatinine

Measurement	1	2	3	4	5	6	7	8	9
Day(s) of Cycle	4	10	12	13	15	17	20	24	28

The days listed above were used for measurements. Two samples are used and listed for long cycles or patients without a normal cycle.

Estradiol (E2)	1.00	1.56	3.86	8.33	4.53	3.03	3.33	3.10	0.91
Estrone (E1)	3.1	3.9	6.8	27.5	16.2	13.2	12.0	12.7	4.8
a-Pregnanediol	57	35	41	42	45	115	179	230	86
b-Pregnanediol	162	127	138	147	157	312	467	**565**	256
b-Pregnanediol/E2 Ratio	161	81	36	18	35	103	140	182	282
Creatinine	1.00	1.75	1.90	1.65	2.41	1.23	1.11	0.87	0.86

Sample (#8) with the highest b-Pg value (565) is used for E and Pg metabolites for DUTCH Complete or Plus if ordered.

Normal Ranges	Follicular	Ovulatory	Luteal	Postmenopausal
Estradiol	1-2ng/mg	4-12ng/mg	1.8-4.5ng/mg	0.2-0.7ng/mg
Estrone	4-12ng/mg	22-68ng/mg	12-26ng/mg	3.0-7.0ng/mg
a-Pregnanediol	25-100ng/mg	25-100ng/mg	200-740ng/mg	15-50ng/mg
b-Pregnanediol	100-300ng/mg	100-300ng/mg	600-2000ng/mg	60-200ng/mg

b-Pregnanediol/E2 ratio is typically 50-300 in the follicular phase, <100 during ovulation, and 100-500 in the luteal phase. Creatinine normal range, 0.2-2.0 mg/mL. Values outside this range may be less certain due to under or overhydration.

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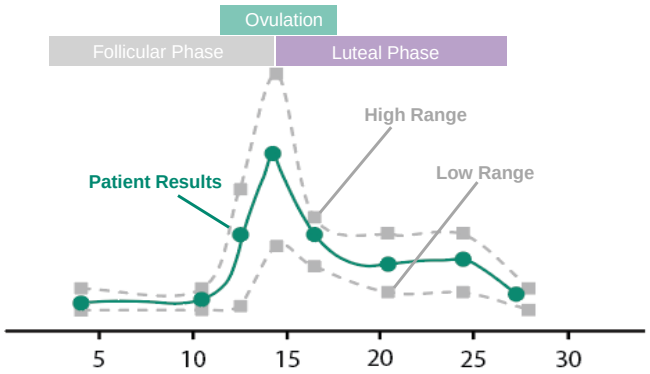
Cycle Mapping Guide

Thank you for testing with us! If this is your first report, you are encouraged to watch our educational videos on how to read the report at www.dutchtest.com in the video library. The comments below include general information that we hope you will find useful in your understanding of the patient's results. These results and comments are not intended to diagnose any specific conditions.

You'll find four stacked graphs with the reference ranges and the patient's results mapped out. The top graphs represent estrogen (E) production, and the bottom graphs represents progesterone (Pg) production. The horizontal axis shows the cycle days (0-30+) and the vertical axis shows hormone concentration or hormone metabolites being measured. Healthy cycles typically range from 21-35 days. The patient likely submitted many samples over one cycle, and we have selected the 9 most relevant measurements. Some measurements from longer cycles are from two-day averages to ensure transitory E and Pg peaks are not missed.

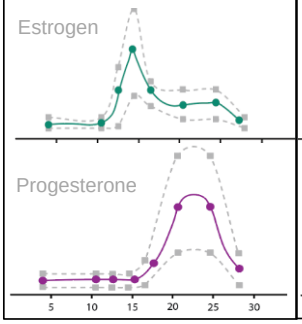
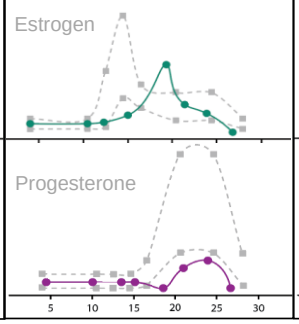
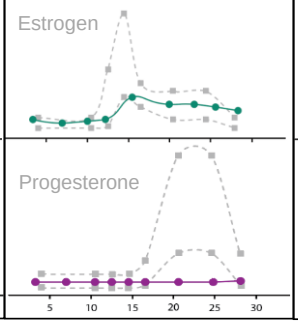
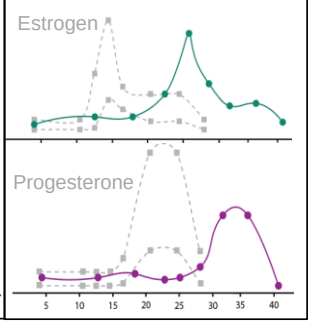


For most cycles <34 days, measurements are made from single days, selected to best represent overall patterns of ovulatory & luteal peaks. The day 4 sample set is usually collected at the end of the cycle, four days after menses (used for DUTCH Complete/Plus), but is plotted at the beginning of the cycle as above. If a DUTCH Complete or Plus was ordered, data for the E and Pg metabolite values are taken from the day on the Cycle Mapping associated with the progesterone (b-pregnanediol) peak in the luteal phase.

The first part of the cycle (days 1-14) is the "follicular phase," ovulation typically occurs mid-cycle, and the "luteal phase" refers to the 2nd half of the cycle (days 14 until menses). These phases may shift in patients with atypical cycle lengths. Levels may still be considered normal in short or long cycles even if the timing of the E or Pg peaks are at different times.

In the top graphs, we follow both primary estrogens, estrone (E1) and estradiol (E2). In a typical cycle, estrogen rises in the follicular phase, which stimulates the luteinizing hormone (LH) surge from the brain about 24-36 hours before ovulation, which leads to the production of Pg the second half of the cycle (measured by its primary pregnanediol metabolites). Pg rises only after ovulation has occurred, reaching its peak 5-7 days later, then begins to decrease before the onset of menses. When Pg does not rise it indicates that the patient is likely not ovulating. A weak rise in Pg can also indicate either no ovulation or a weak corpus luteum (luteal phase defect), which is associated with poor egg maturation, difficulty maintaining a secretory endometrium and infertility. Ranges for Pg are similar for a postmenopausal woman or a cycling woman who is in the follicular phase. In the table near the bottom of page 1 below the graphs, the patient's results are displayed in a table. This includes creatinine, which is used to correct for hydration. If creatinine is very low or very high, hormone measurements from that day may be less reliable.

Below are four different cycle patterns that may help with interpretation (video tutorial here)

This is a relatively normal cycle. There is an E peak around ovulation and a Pg surge to follow with enough Pg to balance estrogen.	A luteal phase defect may be suspected. The luteal phase is shorter than normal. Ovulation is later than typical, followed by a Pg peak that is less than ideal.	There is likely no ovulation in this case. The E pattern shows no mid-cycle rise. With no ovulation, Pg levels remain flat with no surge.	A long cycle, over 40 days. E and Pg patterns can still be assessed by comparing the patient values with expected ranges, but peaks may not align horizontally.
			

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