

## Female Hormone Levels in Premenopause, Perimenopause, and Postmenopause

| Hormones  | Notes   | Premenopause<br>(Age 13-45) |              |            | Perimenopause<br>(Age 40-50) |              |            | Postmenopause<br>(Age > 50) |           |            |
|---|---|-----------------------------|--------------|------------|------------------------------|--------------|------------|-----------------------------|-----------|------------|
|   |   | Early Cycle                 | Mid Cycle    | Late Cycle | Early Cycle                  | Mid Cycle    | Late Cycle | Early Cycle                 | Mid Cycle | Late Cycle |
|   |   | Follicular Phase            | Luteal Phase |            | Follicular Phase             | Luteal Phase |            | Early Cycle                 | Mid Cycle | Late Cycle |
| <b>Follicle Stimulating Hormone (FSH) (IU/L)</b>      | Peak occurs at midcycle; increases with menopause   | 5-20                        | 30-50        | 5-20       | 20-24                        | 50-70        | 20-24      | 50-96                       |           |            |
| <b>Estradiol (E2) (pg/ml)</b>                         | Gradually declines with age; decreases 40-60% from baseline at menopause  | 20-100                      | 100-350      |            | 60-70                        | 60-95        |            | 5-25                        |           |            |
| <b>Estrone (pg/ml)</b>                                | Premenopausal women estrone levels generally parallel to those of estradiol; after menopause, estrone levels no longer parallel to estradiol, instead, estrone levels is higher than those of estradiol | 30-100                      | >150         | 90-160     | N/A                          |              |            | 20-40                       |           |            |
| <b>Luteinizing Hormone (LH) (IU/L)</b>                | Increases with menopause  | 1-18                        | 25-57        | 0.5-18     | N/A                          |              |            | 12-55                       |           |            |
| <b>Progesterone (P4) (ng/ml)</b>                      | Max occurs during pregnancy; gradually declines with age; decreases 12 folds compared with baseline at menopause  | < 1                         | 0.2-1.5      | 2-28       | N/A                          |              |            | <1                          |           |            |
| <b>Total Testosterone (ng/dl)</b>                     | Decreases with menopause  | 30-70                       |              |            | 21-30                        |              |            | 19-25                       |           |            |
| <b>Free Testosterone (pg/ml)</b>                      | Decreases with menopause  | 0.7-3.6                     | 3-5          | 10-13      | N/A                          |              |            | 1.2-2.2                     |           |            |
| <b>Dehydroepiandrosterone Sulfate (DHEAS) (ug/dl)</b> | Peaks at early 20's, then gradually declines with age   | 135-330                     |              |            | 66-140                       |              |            | 59-96                       |           |            |
| <b>17 Hydroxyprogesterone (ng/dl)</b>                 | Decreases with menopause  | 20-100                      | 20-290       |            | N/A                          |              |            | N/A                         |           |            |

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