Pre-natal biochemical screening
Screening strategies

- **Integrated screening**: combines the screening markers of the first and second trimester markers into a single integrated risk figure. Serum integrated test utilizes only the serum markers of both gestations whereas the full integrated test in addition includes the nuchal translucency in the first trimester. This testing raises many concerns. It denies the option of prenatal diagnosis in the first trimester and early termination of affected pregnancies. It also raises ethical concerns of withholding high risk screening results of the first trimester screening.

- **Sequential screening**: This incorporates the first and second trimester screening in a two-step procedure. Women with a high risk in the first trimester combined screen are offered definitive testing. All other women are offered second trimester screening and counseling based on that result.

- **Contingent screening**: This combines the best of screening in the first and second trimester. It is similar to sequential screening but the results after the first trimester screen are divided into three: screen negative, intermediate risk, and screen positive. A low first trimester screen offers early reassurance. It selects a sub-group of high risk screen patients for early confirmatory testing and only measures the second trimester markers in a small subset with borderline/intermediate results on the first trimester screen.
• **Screening in twin pregnancies**: screening for aneuploidy by biochemical markers is complex and fraught with uncertainties. The biochemical markers in twin gestation are on an average twice that in singleton pregnancies. A pseudorisk is calculated whereby the measured result (in MoM) is divided by the corresponding median MoM value found in twin pregnancies. The risk is evaluated as for a singleton pregnancy. This decreases the sensitivity of the screening test compared to singleton pregnancies, however it remains a useful approach for evaluation.

• The first trimester screening utilizes the individual NT of the twins and the chorionicity to generate a risk figure.

• Screening strategies in the first trimester along with newer patterns of sequential and contingent screening have allowed higher detection rates of Downs syndrome to over 90% with a concomitant decrease in the number of women subjected to invasive testing.