# Understanding Probe Fit and Historical Probe Fit Comparisons

With the ability to check at the probe fit at the beginning and end of a measurement, there is a new found level of confidence in OAE testing. This test confidence is not just in test/retest reliability but simply, TEST reliability overall. Knowing the fit of the probe at the start and finish of a DP measure provides an important validation measure of the test.

The user should be aware that a high correlation value does not always mean a good fit. The higher the correlation number, the more consistent the probe placement remained during the test. However, a high number does not confirm a GOOD fit—it simply means the probe placement did not change during the test. You should also consider the grey shaded area and learn what the different lines can indicate with regard to the probe fit.

Poor Fit/Correlation | **Good Fit Example** | **Occluded Fit Example** | **Poor Fit Example**
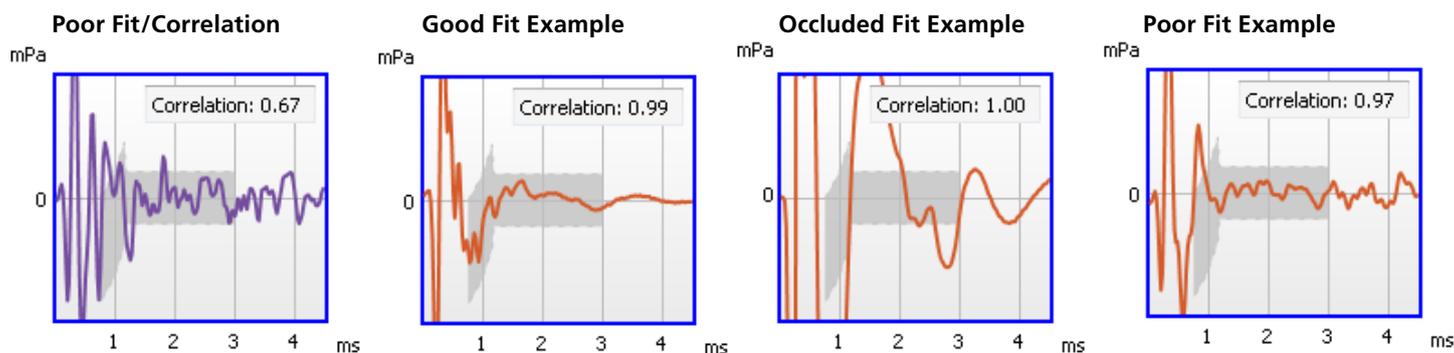

Probe fit data is saved and is extremely valuable when making historical data comparisons.
Did you ever ask these questions when reviewing test results:

1. Are those results due to poor probe fit?
2. Are the L1/L2 levels off because of poor probe fit?
3. Did the DP amplitudes really change or is it a result of inconsistent probe fittings?

We know that response amplitude can change test to test. When viewing previously collected data and comparing to current test data, probe fit should be compared to confirm that each test had similar probe fits and consistent probe fits.
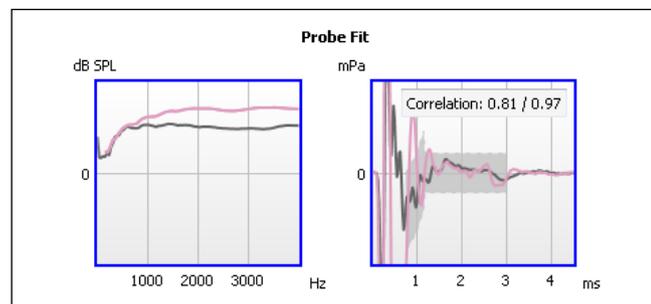
Note (1) the inconsistent overlap between pink and black and (2) the fair correlation value of test 1 (pink) and excellent correlation of test 2 (black).
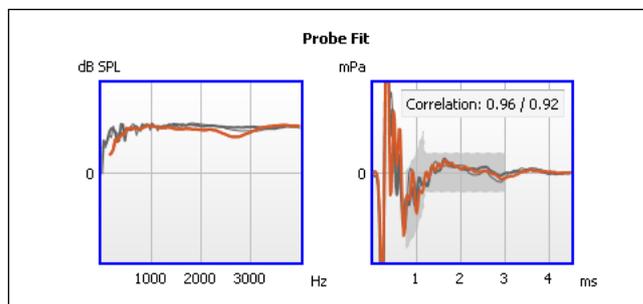
Here, you see consistent overlap of the two fits and excellent correlation values for test 1 and 2.

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In Practice Example

Absent OAEs (A).

Correlation number is high, confirming good fit at the beginning and end of the test. Probe fit is within the acceptable shaded, grey area (B).

Here, the Historical Data box is shown (1). By selecting one of the previously performed tests, it will be overlaid on the current results (2). You will also see the stored probe fit and correlation value overlaid with the current fit and value (3). For this particular test, we can be confident that the change in DP amplitudes is NOT due to inconsistent probe fits between tests. Good probe fits were achieved for both tests and consistent throughout each individual test. If the Probe fit box looks similar to this box (3.1), the user should further investigate probe fit as the cause of the amplitude change.

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