Speech recognition performance varies highly among cochlear implant (CI) users.Aided sound field thresholds are often assessed to determine the audibility of soft sounds with targets usually set at 20 to 30 dB HL. The aided thresholds are related to the T-SPL (default is set at 25 dB SPL), which relates the minimum intensity input level to the electrical stimulation at T level, the microphone sensitivity and T levels.Vaerenberg et al. (2014b) conducted a global survey on fitting practices and found considerable differences between CI centers, but they also concluded that all CI centers focus on the setting of stimulation levels based on psychophysically derived measures of threshold (i.e., T level for Cochlear) and comfort (i.e., C level for Cochlear).Although a large number of fitting parameters and other measures are available to the clinician during a fitting session for Cochlear sound processors, other parameters (e.g., speech coding strategy, pulse width, stimulation rate, gain, Q factor, frequency allocation table, number of maxima) are usually set at default.These included T and C levels, electrical dynamic range (DR), aided sound field thresholds, electrically evoked compound action potential (ECAP) thresholds, and electrode impedances, but also parameters that are related to the profile of T levels, C levels, impedances, and ECAP thresholds.It has been reported that a high variability of T levels across electrodes, due to variations in the electrode-to-neuron distance and neural survival, can negatively impact speech recognition as well (Pfingst & Xu 2004, 2005; Zhou & Pfingst 2014).Some studies showed that patient characteristics, such as age, duration of deafness, etiology, and linguistic and cognitive factors partly explain the variance in speech recognition.The rationale for focusing on important fittingparameters, ECAP thresholds and impedances is that (1) these parameters are available to the fitting audiologist during a fitting session, and (2) these parameters can be adjusted or may change between fitting sessions.The present study aims to add to previous research by using prediction models to identify parameters that relate to speech recognition in quiet and noise in a group of adult Cochlear CI users.If T levels are set correctly, aided thresholds should be around the target level of 25 dB HL (i.e., with T-SPL set at default and sensitivity at 12; Cochlear 2012).Examples of these factors include electrode positioning, electrode insertion depth, and the number of inserted or active electrodes .The variance in speech recognition can still not be fully explained, but many factors potentially contributing to the large variation in outcome have been identified.Also, fitting of CI processors is essential to achieve optimal speech recognition for CI users.Multiple studies have investigated the use of ECAP as an alternative to behavioral parameters in the fitting of adult and pediatric patients (BrownThe identification of possible effects of changing fitting parameters on speech recognition can help to guide clinicians and improve fitting practices.An important goal of fitting CI sound processors is to maximize the use of the DR of the auditory nerve by setting T and C levels for each electrode.Only Cochlear CI users were included, because they form the largest group of adult CI candidates in our CI center.Therefore, the present study focuses on the fitting parameters that are most often manipulated by audiologists (i.e., T and C levels and the DR).In addition, device and implant factors are related to speech recognition .outcomes