



# AI Scoring vs Auto Scoring. What's the Difference?

By providing an explanation of how Artificial Intelligence (AI) Scoring works, as well as the distinctions between AI Scoring and traditional auto scoring software, the following FAQ demonstrates why AI Scoring of sleep studies is more accurate, consistent and adaptable than auto scoring.

## What is Machine Learning (ML)?

Machine Learning (ML) is a subset of AI, and refers to a collection of methods that enable an algorithm to execute specific tasks without being explicitly programmed. A machine learning algorithm learns relationships within the previously observed data in order to make predictions on newly collected data.

The continuous addition of more data leads to finely tuning these predictions more accurately over time. In sleep medicine, this learning helps better pinpoint the signals and events most tied to uncommon sleep disorders and patterns. As a result, AI and ML algorithms can efficiently detect these underlying patterns, as they analyze the complete set of data, rather than a single epoch or a small group of epochs at a time.

## What is AI Sleep Scoring?

AI Sleep Scoring is the automated event detection and analysis of PSG or HSAT data performed by AI Scoring software, like EnsoSleep. The AI does this by analyzing the waveform data of sleep tests and providing an AI scored study for a registered clinician to review.

## What is EnsoSleep?

EnsoSleep is an FDA cleared AI Scoring software that automates sleep staging and event detection for patients ages 13 and up.

EnsoSleep automatically detects studies that need scoring, analyzes them, and places them back into the existing scoring workflow.

**86.6%** sleep staging agreement

**94.9%** sleep disordered breathing event agreement

**93.0%** diagnostic AHI severity agreement

Based on 81,805 epochs, across 100 adult PSGs, with double-blind review\*

## How is AI Scoring Different from Auto Scoring?

Auto scoring solutions are developed using traditional software-assisted programming. This programming requires humans to “code” or “write” individual rules that get applied to sleep study data to generate answers. Since sleep study data, especially PSG data, is highly variable, the number of rules that would have to be written or coded to account for the variability found in sleep studies make these traditional programming approaches unsuitable for scoring sleep studies, and can often cause teams to spend more time correcting errors than they saved in the first place.



In contrast to traditional programming, EnsoData’s AI scoring solution, EnsoSleep, uses a subtype of Artificial Intelligence (AI) called Machine Learning (ML) which doesn't require humans to individually write all the rules. Instead, ML software learns from the answers (aka, sleep studies scored and interpreted by board certified clinicians), and uses that information to develop an unlimited number of rules based on patterns in the previously scored studies.



## AI Scoring Continues to Learn and Improve With More Data

EnsoSleep continues to improve over time as it learns how to make its rules better when sleep techs make edits to studies previously scored by EnsoSleep. EnsoData works with sleep centers to configure EnsoSleep to each sleep lab’s preferences (within the AASM scoring guidelines), including snore settings, leg movements, desaturation thresholds, and more. As a result, EnsoSleep AI Scoring is more sophisticated, consistent, and adaptable than traditional software-assisted auto scoring solutions.

Contact us to schedule a demo and discover why 400+ clinics are using EnsoSleep to help score 23,000+ PSG and HSAT studies every month.