

# Adolescent/Adult Sensory Profile

## Overview

The *Adolescent/Adult Sensory Profile* enables clients from 11 through 65+ years to use a Self-Questionnaire for evaluating their behavioural responses to everyday sensory experiences. It provides a standard method to measure and profile the effect of sensory processing on functional performance. The profile is based on the Sensory Profile (Dunn, 1999), a measure developed for children 3 through 10 years of age.

The Adolescent/Adult Sensory Profile is designed as a trait measure of sensory processing. An individual answers questions regarding how he or she generally responds to sensations, as opposed to how he or she responds at a specific time. The questionnaire takes 10 to 15 minutes to complete.

Using quadrant scores—Low Registration, Sensation Seeking, Sensory Sensitivity, and Sensation Avoiding, the profile contains 15 questions in each quadrant. These cover the sensory processing categories of visual, auditory, touch, taste/smell, movement, and a general category for activity level.

## Benefits and Features

Adolescent/Adult Sensory Profile results bring greater understanding about why individuals engage in particular behaviours and why they prefer certain environments and experiences. The results provide an increased awareness and understanding of sensory processing preferences not only for the client but also for the therapist, team members, family members, and others who are close to the individual.

Profile results also enable more informed intervention planning, which takes into account an individual's particular preferences.

This profile is one of the few sensory processing tools available for adolescents and adults. It is compatible for use in a variety of settings including schools, clinics, hospitals, long-term care facilities, community-based centers, and wellness centers.

The profile is non-intrusive and is quick and easy to administer. Items focus on everyday life and increase the relevance and comprehension of the questionnaire for the individual. It is applicable for individuals with or without illness/disability related issues.

Because the *Adolescent/Adult Sensory Profile* is congruous with the *Sensory Profile* and the *Infant/Toddler Sensory Profile*, the three instruments together cover a full age span. This can be especially useful when considering how different individuals and different age groups may relate to one another based on their own sensory processing preferences and unique profiles.

## Profile Components

The *Adolescent/Adult Sensory Profile* consists of a User's Manual and a Self Questionnaire, with a Summary Score Sheet included in the Self Questionnaire.

The User's Manual contains information about the rationale, theory, and development of the *Adolescent/Adult Sensory Profile* and specific

information about the administration, scoring, and interpretation of the scores. The manual also contains intervention suggestions for each sensory processing category within each quadrant and case studies.

The Self Questionnaire contains 60 items that describe responses to everyday sensory experiences. An individual completes the form by indicating the frequency of a response (Almost Never, Seldom, Occasionally, Frequently, Almost Always) to various sensory experiences.

The Summary Score Sheet provides a summary of the individual's score on each of the quadrants. It contains a Quadrant Grid to help summarize an individual's scores in each quadrant, a Quadrant Summary to plot quadrant raw score totals and determine a classification, and a Quadrant profile to plot the classifications onto a graphic display and create an individual profile.

## Description of Item Categories

Dunn's Model of Sensory Processing presents the neurological thresholds and behavioural responses as a continuum that interact with each other. The neurological threshold refers to the amount of stimuli required for a neuron or neuron system to respond. At one end of this continuum, thresholds are very high and at the other end thresholds are very low. The behavioural response refers to the way a person acts in consideration of his thresholds. At one end of this continuum, a person responds passively (in accordance with his thresholds). At the other end a person responds actively (to counteract his thresholds).

The 60 items on the Self Questionnaire are organized according to the sensory processing categories—Taste/Smell, Movement (vestibular/proprioceptive), Visual, Touch, Activity Level, and Auditory. This format follows a common framework for organizing sensory processing categories into functional sections. Item components provide information on the Quadrants (Low Registration,

Sensation Seeking, Sensory Sensitivity, and Sensation Avoiding), as well as the sensory processing categories listed above; the Neurological Threshold Continuum (Low and High); and the Behavioral Response/Self-Regulation Continuum (Passive and Active).

### Items that Relate to Each Quadrant

Low Registration items identify behaviours such as missing stimuli or slowed responses. ("I don't get jokes as quickly as others.") sensory stimuli, and efforts to make exposure more predictable. ("I only eat familiar foods.")

### Items Relating to the Sensory Processing Categories

Taste/Smell Processing items measure the response to odors and tastes. ("Many foods taste bland to me.")

Movement Processing items measure response to vestibular and proprioceptive stimuli. ("I am unsure of footing when walking on stairs.")

Visual Processing items measure responses to things the individual sees. ("I like to go to places that have bright lights and are colorful.")

Touch Processing items measure response to stimuli that touch the skin. ("I stay away from standing in line or close to other people because I don't like to get too close to others.")

Activity Level items measure disposition toward involvement in daily activities. ("I work on two or more tasks at the same time.")

Auditory Processing items measure response to things the individual hears. ("I am distracted if there is a lot of noise around.")

### Items that Relate to the Neurological Threshold Continuum

High Threshold items measure a lack of response or need for more intense sensory stimuli. ("I hum, whistle, sing, or make other noises.")

This component combines Low Registration and Sensation Seeking items. Low Threshold items measure a person's notice of or annoyance with sensory stimuli. ("I don't like strong tasting mints or candies.") This component combines Sensory Sensitivity and Sensation Avoiding items.

### Items that Relate to the Behavioral Response/Self-Regulation Continuum

Passive Behavior items measure an individual's tendency to respond in accordance with her or her neurological threshold. ("I don't notice when my name is called.") this component combines Sensory Sensitivity and Low Registration items.

Active Behavior items measure a person's tendency to respond, to counteract his or her neurological threshold. ("When others get too close, I move away.") This component combines Sensation Avoiding and Sensation Seeking items.

### Scores Provided

Researchers defined a classification system by determining cut scores for each of the quadrant raw score totals. The classification system describes the individual's propensity for behaviours in each sensory processing quadrant as Much Less Than Most People, Less Than Most People, Similar to Most People, More Than Most People, or Much More Than Most People. The classification system describes an individual's placement along a continuum of distributed scores rather than whether an individual's performance on any quadrant indicates areas of concern.

Cut-scores and classifications are provided for the *Adolescent/Adult Sensory Profile*, as they are for the *Sensory Profile*. The AASP provides this information for quadrants, while the SP provides it for sections (sensory processing categories) and factors. Quadrant scoring reflects an evolving understanding of the applications of the theoretical concepts of the quadrants: the thresholds (high/low), the behavior responses (active/passive), and

the interplay between them. Because sections (categories) incorporate both threshold and behavior response components, a high score in a behavior component can offset a low score in a threshold component and produce a numerical score that does not yield meaningful interpretation information. The Pattern Grids provide a non-numerical method to examine how scores cluster along the threshold and behavioural components within and across all six sensory processing categories (sections). The AASP is a sensory processing assessment tool that formats both quadrant and categories data.

### Research

A pilot study with 615 people ranging in age from 17-79 was conducted with participants recruited from the psychology department at the University of Kansas, the occupational therapy education department at the University of Kansas Medical Center, and a mailing list of individuals who had previously expressed interest in the *Sensory Profile*. Item reliability and factor analysis were conducted to determine whether items corresponded to the intended quadrant.

After item analyses were conducted and revisions made to the *Adolescent/Adult Sensory Profile*, the measure was administered to a large sample of adolescents (ages 11-17 years) and adults (ages 18 through 65 years and older) to develop a classification system and cut scores. A sample of 950 adolescents and adults without disabilities completed the final version of the *Adolescent/Adult Sensory Profile*. Like the pilot sample, approximately 92% of the standardization sample was white and predominantly from the mid-western region of the United States; socioeconomic data was not reported.

## Standardization Sample by Age and Gender

	Adolescents <i>n</i> = 193	Adults <i>n</i> = 496	Older Adult <i>n</i> = 261
<b>Gender</b>	<i>n</i> %	<i>n</i> %	<i>n</i> %
Male	95 (49%)	241 (49%)	110 (42%)
Female	98 (51%)	255 (51%)	151 (58%)
<b>Age</b>			
Range (years: months)	11:0–17:11	18:0–64:11	65:0–97

Some individuals reported conditions such as attention deficit disorder, obsessive-compulsive disorder, or anorexia nervosa and these results were excluded from the standardization study. Other reported conditions such as diabetes, near-sightedness, and high blood pressure and these results were included in the study. Individuals with identified conditions such as schizophrenia and bipolar disorder were placed in a separate study.

## Reliability and Validity

Test reliability is an indication of the degree to which a test provides a precise and stable score. The internal consistency (coefficient alpha) method was used to estimate the reliability of the *Adolescent/Adult Sensory Profile*, providing information about the consistency of responses to items in the *Adolescent/Adult Sensory Profile* for each sensory processing quadrant. The values of alpha for the various age groups and quadrant scores ranged from .639 to .775, with 0 representing no consistency and 1 representing perfect consistency.

Validity evidence related to test content was established during the development of the *Adolescent/Adult Sensory Profile* by conducting an expert panel review, and collecting data for pilot studies to ensure that the test sampled an appropriate range of adolescent and adult sensory processing behaviours, that the items were placed

appropriately within quadrants, and that they reflected Dunn’s Model of Sensory Processing. (This model provides a theoretical framework for interpreting the scores, understanding what they mean for the individual, and designing interventions.)

To provide evidence of convergent and discriminant validity for the *Adolescent/Adult Sensory Profile*, a study was conducted to compare various scores obtained on the *Adolescent/Adult Sensory Profile* with the NYLS Adult Temperament Questionnaire (Chess & Thomas, 1998).

Our study examined the relationship between the Adolescent/Adult Sensory Profile quadrants and the NYLS Adult Temperament Questionnaire subscales. A sample of 207 adults completed both measures. Correlations between the subscales of the two were examined. The table below displays the correlations and highlights those of moderate strength (.30 and above, *p* value <.001.)

Further evidence of convergent validity is found when comparing responses on the *Adolescent/Adult Sensory Profile* to skin conductance responses, often used as a physiological measure of response to sensory information. In this study, skin conductance response was measured following an auditory stimulus (Brown, Tollefson, Dunn, Cromwell, & Filion, 2001). Skin conductance measures of responsivity (amplitude of response to the first auditory stimulus) and trials to habituation (number of stimuli presented before two consecutive non responses) were recorded.

From a sample of 80 undergraduate occupational therapy students that had completed the *Adolescent/Adult Sensory Profile*, quadrant scores were examined to identify the five highest scoring students. These students were then invited to participate in the skin conductance study. Consequently, a total of 20 students participated, 5 in each of the following groups: Low Registration, Sensation Seeking, Sensory Sensitivity, and Sensation Avoiding.

## Correlations between Quadrants of the Adolescent/Adult Sensory Profile and Subscales of the NYLS Adult Temperament Questionnaire

	Low Registration	Sensation Seeking	Sensory Sensitivity	Sensation Avoiding
Activity level	.167	-.145	.094	.030
Rythmicity	-.112	-.164	.072	.156
Adaptability	.200	-.289	.256	.357
Approach/Withdrawal	.033	-.416	.251	.310
Mood	.126	-.300	.328	.371
Intensity	.140	-.193	.295	.225
Distractibility	.025	-.019	.282	.210
Persistence	.224	-.101	.224	.121
Sensory Threshold	.112	-.140	.459	.237

Results supported the original hypotheses that 1) people with low thresholds (Sensory Sensitivity and Sensation Avoiding) would have a greater responsivity than people with high thresholds (Low Registration and Sensation Seeking) and 2) people with high scores on Sensation Avoiding and Low Registration would be quicker to scores in Sensory Sensitivity and Sensation Seeking. habituate to the stimulus than people with high scores in Sensory Sensitivity and Sensation Seeking.

### Summary

The *Adolescent/Adult Sensory Profile* is a 60-item self-report questionnaire that provides information vital to understanding the sensory processing of an individual and enables more informed intervention planning. It is applicable to a variety of settings, such as schools and client-centered practice, and is one of the few instruments available for measuring the sensory processing of adolescents (ages 11 through 17) and adults (ages 18 through 65 and older). Using the *Adolescent/Adult Sensory Profile* encourages an individual's full participation in identifying his or her personal patterns of sensory processing preferences, enhancing his or her awareness of patterns of daily functioning, and determining strategies to optimize his or her sensory environment.

