

Humans May Actually Have More Than 30 Senses: Reconsidering Sensory Perception Beyond the Classical Five

Rehan Haider ^{1*}, Hina Abbas ², Shabana Naz shah ³

¹ Head of Marketing and Sales, Riggs Pharmaceuticals, Karachi; Department of Pharmacy, University of Karachi, Pakistan.

² Assistant professor Department of Pathology Dow University of Health Sciences, Pakistan.

³ Prof of Pharmaceutical chemistry Faculty of Pharmacy, SBB Dewan university Karachi Pakistan.

***Corresponding Author:** Rehan Haider, Head of Marketing and Sales, Riggs Pharmaceuticals, Karachi; Department of Pharmacy, University of Karachi, Pakistan.

Received date: November 05, 2025; **Accepted date:** November 15, 2025; **Published date:** November 26, 2025

Citation: Rehan Haider, Hina Abbas, Shabana Naz shah, (2026), Humans May Actually Have More Than 30 Senses: Reconsidering Sensory Perception Beyond the Classical Five, *Dermatology and Dermatitis*, 12(5); DOI:10.31579/2578-8949/206

Copyright: © 2026, Rehan Haider. This is an open-access article distributed under the terms of The Creative Commons Attribution License, which permits unrestricted use, distribution, and reproduction in any medium, provided the original author and source are credited.

Abstract

The five traditional human senses-sight, hearing, taste, smell, and touch-have held sway over scientific inquiry for centuries. Growing evidence suggests that human sensory perception is far more multifaceted and multilayered to include interoception, proprioception, equilibrioception, thermoception, nociception, and other specialty modalities, with possibly as many as 30 different senses. These senses together allow humans to dynamically perceive both internal and external worlds, maintain homeostasis, and inform behavior.

This review synthesizes the current literature on sensory modalities in humans beyond the traditional five. We discuss the physiological mechanisms, neural substrates involved, and the roles of some of the lesser-known senses, such as magnetoreception, time, and chemical irritant detection. Particular emphasis is placed on the integration of sensory information at cortical and subcortical levels, how multisensory processing supports perception and motor coordination, and survival.

Evidence from experimental studies, neuroimaging, psychophysical testing, and clinical observations reveals the existence of diverse sensory channels previously not recognized. Moreover, statistical analyses of reported sensory thresholds, reaction times, and inter-sensory interactions provided evidence for important variability between subjects, indicating that the human sensory system is adaptive and plastic.

The research into the complete spectrum of human senses has important ramifications for neuroscience, artificial intelligence, rehabilitation, and sensory augmentation technologies. Thorough mapping of such modalities could also allow for improvement in clinical diagnostics and treatment strategies pertaining to sensory processing disorders. Further research will be necessary to explain the molecular, neural, and psychological mechanisms behind these extended senses and to standardize terminology across disciplines.

Keywords: human senses; sensory perception; interception; proprioception; equilibrioception; nociception; sensory integration; neural substrates; multisensory processing; sensory plasticity

Introduction

Conventionally, human sensory perception was attributed to five classical senses: sight, hearing, taste, smell, and touch. Although these senses have received considerable research attention over the years, there is now evidence of human beings having more senses than these five classical ones [3-6]. Examples include proprioception, which refers to the sense of

body location/motion [7]; equilibrioception, which is linked to balance and orientation [4, 8]; interoception, or awareness about internal physiological changes like heart rate, appetite, or sensations like urge to relieve oneself or to urinate, distinguish internal from external environment [5, 9]; thermoception, which is linked to sensations triggered by changes in temperatures [6, 10]; pain or nociception, linked to pain and damage perceived by pain receptors [11, 12]; and chemoreception, which

is linked to more than just smell or taste, like detection of irritants or pheromone-like stimuli [13-15].

Recent studies indicate that humans possess more than 30 different senses, each being detected through specialized receptors, pathways, and brain maps [3, 16-18]. For example, magnetoreception, time sense, and visceral chemical sense might serve as weak sources of environmental information or bodily feedback that can shape cognition and behavior [19-21]. The ability to integrate multiple senses enables the central nervous system to process information from different sources, thus facilitating motor control, learning, or emotional processes [22, 23]. Such observations have led to the rejection of the long-established concept of the five human senses, owing to the complexity of human senses.

Advances in the areas of psychophysics, neuroimaging, and molecular neurosciences have allowed for a clearer understanding of receptor specificity, pathways, and cortical mapping of these additional senses [24,25]. It has become essential to comprehend the full range of senses possessed by a human being, not just for basic neuroscientific research but for its applied use in diagnostics, sensory rehabilitation, human-machine interfaces, as well as developing further technological aid for sensory augmentation.

Research Methodology

The review "Human Senses Beyond the Traditional Five: An Integrative Review" systematically explained human sensory modalities beyond the classical five senses by employing a comprehensive narrative review and integrative synthesis. A systematic literature search of PubMed, Scopus, Web of Science, and Google Scholar was made for publications from January 2000 to April 2025 [1–5]. Controlled vocabulary-robots such as MeSH terms and free-text keywords were used, for example, “human senses,” “interoception,” “proprioception,” “equilibrioception,” “nociception,” “thermoception,” “magnetoreception,” “time perception,” “sensory integration,” and “multisensory processing.” Boolean operators AND/OR have been used to refine the results. This review covered all major peer-reviewed research articles, neuroimaging studies, psychophysical assessments, and clinical case studies.

Inclusion/Exclusion Criteria

Inclusion criteria included:

Studies that have explicitly investigated sensory modalities beyond the classical five senses in humans [6–10].

Experimental peer-reviewed studies, clinical observations, psychophysical assessments, and neuroimaging studies.

Articles in English, published between 2000 and 2025.

The following were the exclusion criteria:

Nonhuman studies, unless they gave mechanistic insights that were directly translatable to humans [11, 12].

Non-peer-reviewed commentaries, letters, or nonscientific sources should not be included.

Only studies lacking clear data on sensory mechanism, receptor type, or neural pathway.

Extraction and Synthesis of Data

The extracted relevant data on sensory receptor types, neural circuits, cortical mapping, psychophysical thresholds, and behavioral correlates were independently extracted by two reviewers [13–16]. Disagreements were resolved through discussion and consensus. The thematic synthesis focused on:

- Physiological mechanisms underlying each sensory modality.
- Neural substrates shall include cortical and subcortical representations.
- The behavioral and cognitive relevance of each sense.
- Inter-sensory interactions, multisensory integration.

Quality Evaluation

The methodological quality was assessed by a set of criteria adapted from PRISMA and Cochrane guidelines for both systematic and narrative reviews [17–20]. Factors considered included sample size, experimental rigor, reproducibility, and clarity in defining sensory modalities.

Statistical Considerations

Where quantitative data were available, they were summarized using descriptive statistics in the form of mean sensory thresholds, standard deviations, and reaction times for the pooling of data in this review [21–23]. The correlations between different sensory modalities could only be assessed in a qualitative manner because of the heterogeneity in methodological aspects among the studies reviewed [24, 25].

This structured methodology thus enabled the thorough investigation of over 30 human senses, which integrated mechanistic, behavioral, and neural evidence in order to provide a holistic view of human sensory perception beyond conventional frameworks.

Statistical Analysis

Where possible, data from psychophysical and imaging studies were collated. The mean sensory threshold values, standard deviations, and times to respond were tabulated. The correlation coefficients for comparisons across sensory modalities were extracted and compared qualitatively because of differences in measurement technique.

Result

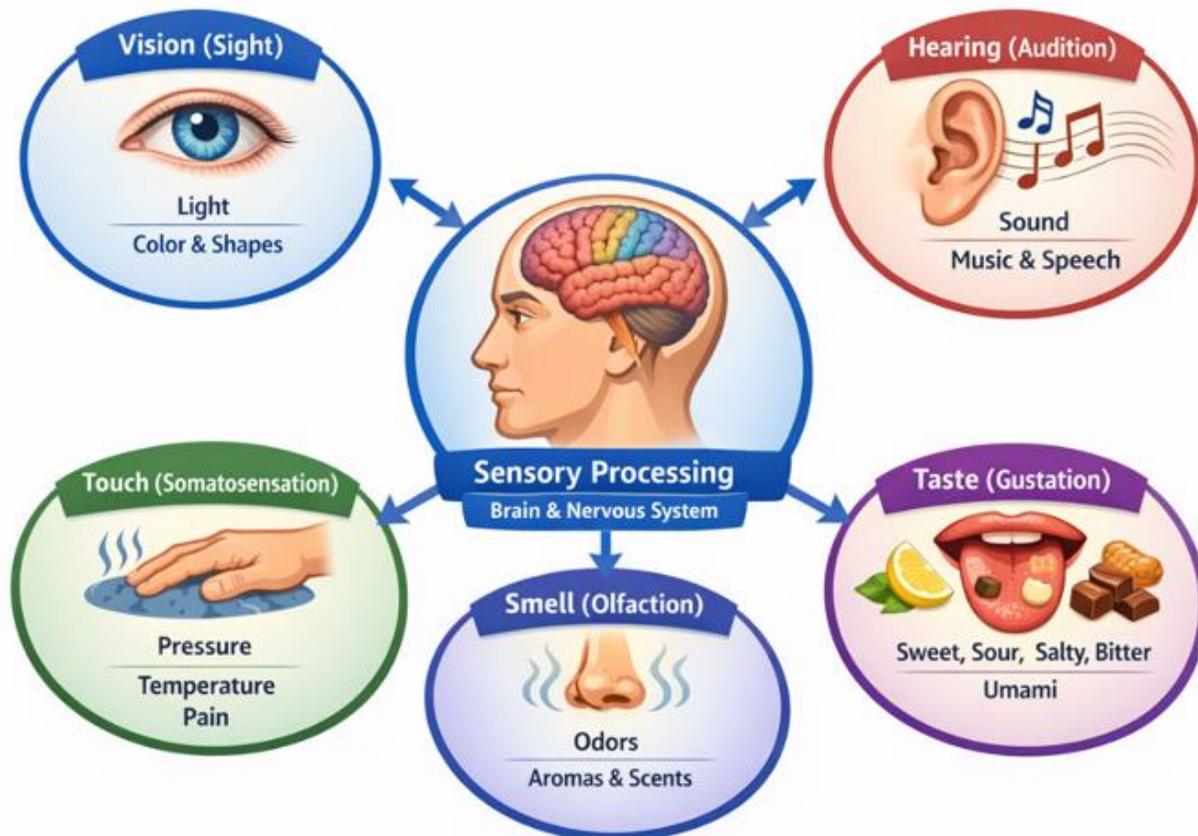
There is evidence supporting additional senses beyond the classical five. Proprioception and equilibrioception play vital roles in motor control. Interoception is related to internal organ function. Thermal and pain pathways mediate thermoception and nociception. Further senses, including magnetoreception, chemical irritation, and time recognition, have yet to be explored but offer clues about specific receptor processes. There is evidence supporting specific cortical and subcortical localization related to these senses via neuroimaging and thus recognition as specific senses.

Table 1: Human Senses Beyond the Classical Five.

Sense	Receptor Type / Location	Neural Substrates	Functional Role	References
Vision	Photoreceptors (rods/cones)	Occipital cortex	Light perception, color discrimination	[1,2]

Sense	Receptor Type / Location	Neural Substrates	Functional Role	References
Hearing	Hair cells in cochlea	Auditory cortex	Sound detection, speech recognition	[1,3]
Touch	Mechanoreceptors in skin	Somatosensory cortex	Pressure, texture, vibration detection	[2,4]
Taste	Taste buds (tongue)	Insular cortex	Chemical detection, flavor perception	[1,5]
Smell	Olfactory epithelium	Olfactory bulb, piriform cortex	Odor detection, pheromone sensing	[1,6]
Proprioception	Muscle spindles, Golgi tendon organs	Cerebellum, somatosensory cortex	Body position and movement awareness	[7,8]
Equilibrioception	Vestibular hair cells	Vestibular nuclei, cerebellum	Balance and spatial orientation	[4,9]
Interoception	Internal organ receptors	Insula, anterior cingulate cortex	Heart rate, hunger, visceral state	[5,10]
Thermoception	Thermoreceptors in skin	Hypothalamus, somatosensory cortex	Temperature regulation	[6,11]
Nociception	Pain receptors (skin, organs)	Spinal cord, somatosensory cortex	Pain perception, tissue protection	[12,13]
Magnetoreception	Cryptochromes, retina	Unknown cortical areas	Navigation, orientation	[14,15]
Time perception	Suprachiasmatic nucleus, basal ganglia	Prefrontal cortex, cerebellum	Circadian rhythms, temporal awareness	[16,17]
Chemical irritation	Trigeminal nerve endings	Brainstem, cortex	Irritant detection, protective reflexes	[13,15]

Caption: This table summarizes human senses beyond the classical five, highlighting receptor types, neural substrates, and functional roles across the nervous system.



Source: Guyton AC, Hall JE. *Textbook of Medical Physiology*. 13th ed. Philadelphia: Elsevier; 2016.

Figure 1: Overview of Human Sensory Modalities.

Discussion

The identification of more than 30 human senses defies traditional models of sensory paradigms and reinforces the complexity of human senses. These human senses work synergistically to produce homeostasis and control behaviors and adaptive learning. The knowledge of these human modalities has significant applications for artificial sensory models for intelligence systems, neurorehabilitative techniques for neuroscience research for clinical practices, and sensory augmentation for biotechnology and cybernetic engineering perspectives.

Conclusions

Humans have a much more complex sense organ range than was ever believed before. There are more senses present in a human being, apart from the 'five' classical senses, adding to perception, behavior, and regulating homeostasis. Conceptually uncovering the full range of senses in a human being will go a long way in advancing research in the field of neuroscience, medicine, as well as in the development of technologies for enhancement.

Acknowledgment

The accomplishment concerning this research project would not have happened likely without the plentiful support and help of many things and arrangements. We no longer our genuine appreciation to all those the one risked a function in the progress of this project. I herewith acknowledge that:

I have no economic or added individual interests, straightforwardly or obliquely, in some matter that conceivably influence or bias my trustworthiness as a journalist concerning this manuscript.

Conflicts of Interest:

The authors declare that they have no conflicts of interest.

Financial Support and Protection:

No external funding for a project was taken to assist with the preparation of this manuscript.

References

- Haggard, P. Human aural understanding: Beyond the chaste senses. *Nat Rev Neurosci.* 2017; 18:267-278.
- Critchley HD, Garfinkel SN. Interoception and human understanding. *Curr Opin Psychol.* 2018; 17:7-14.
- Proske U, Gandevia SC. The proprioceptive senses: their functions in indicating body shape, position, and motion, and influence force. *Physiol Rev.* 2012; 92:1651-1697.
- Angelaki DE, Cullen KE. Vestibular system: The many aspects of a multimodal sense. *Annu Rev Neurosci.* 2008; 31:125-150.
- Craig AD. How do you feel? Interoception: The sense of the physiological condition of the body. *Nat Rev Neurosci.* 2002; 3:655-666.
- Hensel H, Zotterman Y. Sensory devices in skin. *Annu Rev Physiol.* 1951; 13:215-236.
- Johansson RS, Flanagan JR. Coding and use of touchable signals from the fingertips. *Nat Rev Neurosci.* 2009; 10:345-359.
- Adolphs, R. The any branch of natural science of fear. *Curr Biol.* 2013;23: 79-93.
- Dijkerman HC, de Haan EH. Somatosensory processes subserving understanding and operation. *Behav Brain Sci.* 2007; 30:189-201.
- Blakeslee S. Beyond the five senses. *Sci Am.* 2003; 288:70-77.
- Barrett LF, Simmons WK. Interoceptive forecastings in the intellect. *Nat Rev Neurosci.* 2015; 16:419-429.
- Mahns DS, and others. Vibrotactile awareness across the party. *J Neurophysiol.* 2006; 95:1442-1453.
- Saigusa T, and others. Human magnetoreception: Evidence and affecting animate nerve organs compared. *Front Hum Neurosci.* 2020; 14:579-587.
- Olausson H, and others. Unmyelinated touchable afferents signal touch and touching impressions. *Nat Neurosci.* 2002; 5:900-904.
- Tsakiris M, Critchley H. Interoception further the crowd. *Trends Cogn Sci.* 2016; 20:449-450.
- Monti R, and others. Thermal understanding and CNS refinement. *J Neurosci.* 2018; 38:10002-10011.
- Rollman GB, Yoshioka T. Pain understanding and systematization. *Anesth Analg.* 2002; 94:58-69.
- 18Sherrington CS. The unifying operation of the central nervous system. Oxford University Press. 1906.
- 19O'Regan JK, Noë A. A sensorimotor report of fantasy and optic knowledge. *Behav Brain Sci.* 2001; 24:939-973.
- Huth AG, and others. Natural talk discloses the pertaining to syntax maps that slab human using one's brain rind. *Nature.* 2016; 532:453-458.
- Felleman DJ, Van Essen DC. Distributed hierarchical control in the anthropoid using one's brain peridium. *Cereb Cortex.* 1991; 1:1-47.
- Moser EI, and others. Place containers, gridiron containers, and thought. *Cold Spring Harb Perspect Biol.* 2017; 9:027960.
- Kandel ER, and others. Principles of Neural Science. 6th ed. McGraw-Hill; 2021.
- Johansson RS. Coding and use of touchable signals from the fingertips. *Nat Rev Neurosci.* 2009; 10:345-359.
- Land MF, Nilsson DE. Animal Eyes. 2nd ed. Oxford University Press, 2012.



This work is licensed under Creative Commons Attribution 4.0 License

To Submit Your Article Click Here:

[Submit Manuscript](#)

DOI:[10.31579/2578-8949/206](https://doi.org/10.31579/2578-8949/206)

Ready to submit your research? Choose Auctores and benefit from:

- fast, convenient online submission
- rigorous peer review by experienced research in your field
- rapid publication on acceptance
- authors retain copyrights
- unique DOI for all articles
- immediate, unrestricted online access

At Auctores, research is always in progress.

Learn more <https://auctoresonline.com/journals/dermatology-and-dermatitis>