

# HUMAN+

TAKING OUR SENSES TO THE NEXT LEVEL

Series 5 x 52'


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A mysterious cyborg figure will usher us into the enigmatic world of scientists, researchers and entrepreneurs who are revolutionizing the way humans

SEE, TOUCH, TASTE, HEAR, and SMELL.



“Hello Ordinary Humans... you out there... can you hear me? I know you can... Your senses are capable of an astonishing range of perception, gathering sensorial data from everything, yet, you're still underperforming. There's a whole new level of perception that's waiting to be discovered, harnessed and explored. Take hold Humans... and reach out with me...”

**SIGHT** The science of sight has entered a new era. By uncovering the mysteries of sight, and pairing this new knowledge with technology, research is changing the lives of a great many people. Imagine the emotional high of a blind mother who is able to see the facial expressions of her child for the very first time. We will meet a blind rock climber who, using a sensory-substitution device, “sees” via vibrations on his tongue, as well as athletes who up their wins with brain-training techniques that improve their visual acuity. We will go even further, and check out what was once the realm of science fiction: the bionic lens, Scary, or awesome? Sit up and take it all in!

**SMELL & TASTE** Taste and smell are intertwined, and together they reveal the flavors of the food we eat. But we’re learning that senses are not limited to their primary, traditional functions. We are moving towards a world where smell can be exploited to influence our behaviour, even without our knowledge. Marketeers are finding certain scents can make you purchase more, or even influence you to make a specific purchase. Does that give you the shivers? Odors and tastes also have uses that have only recently been explored: we will meet with people suffering from amnesia who recover by working with scents, and see how virtual odors are being used to treat PTSD in veterans. We will get to know a woman whose sense of smell is so refined she is able to detect Parkinson’s disease in people.

**TOUCH** If there is one sense undergoing a gargantuan revolution, it’s touch. Today, technology makes it possible to touch holograms, feel materials on a screen and control objects from a distance with a simple, specific gesture in mid-air. Awesome right? The world of touch is dizzying. We think of touch as resulting in a single sensation but many thousands of nerve endings work in concert to create it. Every occasion to use touch has a vital role in our lives, we would be lost without it. It is the very first sense we experience in the womb, and the emotional bedrock of our wellbeing. Scientists have found ways to simulate a false sense of touch in the brain, in order to overcome the terrible phantom pains of amputated limbs. Managing to give bionic limbs a sense of touch is one of the latest successes of medical technology. Slowly but surely, bionic prostheses are becoming more efficient than natural limbs. Where will this revolution lead us?

**HEARING** Scientific advances in hearing truly defy the imagination. Technology is actively reinventing the ear. Not only is science currently able to implant devices to overcome deafness, but it is also developing hearing aids that surpass the ear’s natural acoustic abilities. More surprisingly, these aids allow the elderly to improve working memory and selective attention, which tend to degrade faster in seniors who are hearing-impaired. Hearing is gradually revealing its full potential. We will meet a blind man whose hearing is so acute that he can navigate a bicycle using echolocation alone. Another man who once could only see the world in shades of grey now “sees” all colors through his ears. Research is moving forward quickly. Today, some scientists can 3D-print ears with living mammalian cells, another scientist has created them from apples and human cells. Still others explore the idea of hearing via our cerebral ventricles - the cavities that lie within the brain. Yes, you heard that right.

### THE ORCHESTRA OF SENSES

Our senses are not designed to give us the most accurate representation of the outside world, instead the array of data they collect emphasizes certain things and allows others to take a back seat – it’s a magnificent orchestra and the conductor is your brain. Nothing can match the brain’s talent. It is capable of change and adaptation. For example, John Bramblitt is blind yet paints with incredible precision. Mandy Harvey is deaf and sings in harmony with her group thanks to sensing vibrations through the floor. An 11-year-old piano virtuoso is able to hear the melody of each of the 5 streams of a fountain in the Vatican. The potential of our senses is so powerful that it’s time to ask if losing one of them can really be considered a handicap. Could it simply be a different way of perceiving the world? The more Science progresses, the better understanding we have of how and why some people develop extraordinary sensory abilities. The idea of our 5 senses has held from Aristotle forward, but scientists are now convinced we have more than 5 senses, and are beginning to uncover their mysteries. The untapped potential of sensory perception is mind-boggling.

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We're living in an era in which the incredible is possible and the unbelievable is believable. The science and technology of sense enhancement and recovery is astonishing, and we'll delve into the awe-inspiring and emotional stories of people whose lives are being turned around.

**Are you ready to catch up  
with science fiction?**

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