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PUBLIC SPEAKING IN MEDICINE

Disclaimer

- Nothing to disclose

Overview

- Opportunities for public speaking
- Grand Rounds
- Common Pitfalls
- The Communication Model
- Components of communication
- Strategies to improve communication

A Better Actor

An Example

Opportunities

- Media
- Politics
- Court
- Advocacy
- Education

Why bring this up?

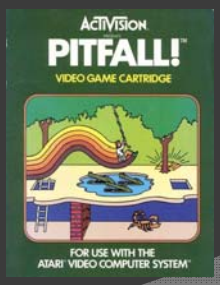
Grand Rounds

- Did not have time to initially work on individual public speaking skills
- Focused on their presentations

S	M	T	W	R	F	S
	Reviewed expectations				Reviewed/ Edited Slides	
	Quick review	Presentation				

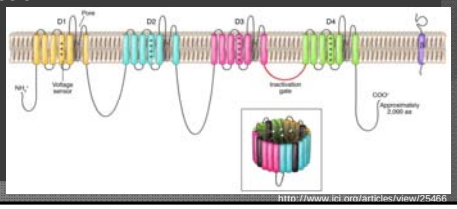
Common Pitfalls

- Mumbling
- Rushing
- Poor eye contact
- Reading slides
- Apologizing
- Verbal garbage
- Nonverbal noise



Voltage-gated sodium channels

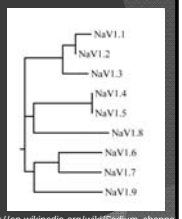
- Consists of a large α subunit that associates with other proteins
  - Voltage kinetics, dependence and location of α subunits are modulated by interactions with β subunits
- 4 homologous domains with 6 segments each



http://www.ics.org/articles/view/25466

α subunit isoforms

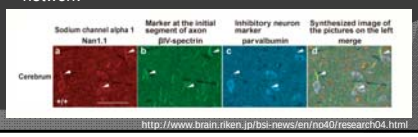
- α subunits are encoded by 9 different genes SCN1A-SCN11A
  - 6-7 are the same and are related to a non-voltage-gated sodium channel
- Isoforms are termed NaV1.1-1.9
  - NaV1.1, 1.2, 1.3 and 1.6 are greatly expressed in the CNS
  - NaV1.6, 1.7, 1.8 and 1.9 are associated with the PNS



http://en.wikipedia.org/wiki/Sodium_channe

α subunit isoforms

- NaV1.1 is detectable shortly after birth and increases until adulthood
  - Predominant channel in caudal brain and spinal cord
  - Found in cell bodies and dendrites
  - Present in axon initial segment of fast-spiking parvalbumin-positive neurons
    - interneurons critical for modulating excitability of the network



http://www.brain.riken.jp/bsi-news/en/no40/research04.html

α subunit isoforms

- NaV1.2 first noted in embryonic development and maximizes during adulthood
  - Highest in rostral regions
  - In dendrites and unmyelinated axons
- NaV1.3 is an embryonic isoform with peak expression at birth
- NaV1.6 is first expressed in the late embryonic period and continues until adulthood
  - Present in motor and sensory pathways
  - In axons, dendrites, pre/post synaptic sites and in the nodes of Ranvier

Functional effects

- Unsure of the effect it has on CNS as a whole
- Mutations may increase or decrease activity
- The data is clouded by several considerations
  - Specific β subunits could alter properties of the sodium channels
  - Mutations may effect channel processing or trafficking
  - Neurons express a number of isoforms and the repertoire of channels may effect on the properties of the mutation
- Early studies in *Xenopus* oocytes and in transfected mammalian cells with missense mutations showed
  - Increased persistent current -> decreased depolarization threshold -> hyperexcitability
  - Less time in an inactivated state -> greater availability -> hyperexcitability

Functional effects

- In a knockout mouse model for DS (Yu et al.)
  - Homozygous mutants that lacked NaV1.1 were ataxic and died at 15 days
  - Heterozygotes with 50% NaV1.1 activity showed spontaneous seizures and reduced seizure threshold to febrile seizures
- Electrophysiologic studies of these mice showed
  - Sodium currents of hippocampal neurons were not effected, but interneurons responsible for GABA mediated neuronal inhibition
    - Of note, GABAergic cerebellar Perkinje neurons also showed decreased currents -> ataxia
- Knock-in mice nonsense mutants for DS (Ogiwara et al.)
  - Decreased amplitudes seen in parvalbumin+ interneurons -> reduced firing -> decreased inhibition

http://www.brain.riken.jp/bsi-news/en/no40/research04.html

Functional effects

- Knock-in mouse model for GEFS+ (Martin et al.)
  - Homozygous mice showed spontaneous generalized seizures and early death and heterozygotes have more infrequent seizures, but reduced seizure threshold for febrile seizures
- Electrophysiologically Na channels showed
  - Slower recovery from inactivation
  - Greater inactivation
  - Reduced sodium current
  - Decreased firing of inhibitory neurons

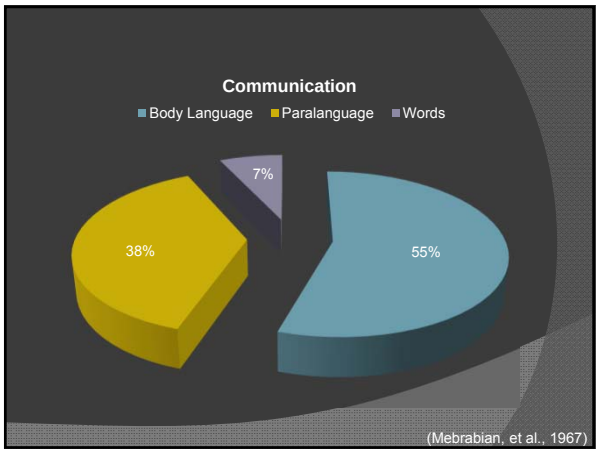
http://www.rikenresearch.riken.jp/eng/research/5010

Genotype-Phenotype

- While studying different mutations in different syndromes on the GEFS+ spectrum a pattern developed
  - DS showed more nonsense/tuncating mutations and had an earlier clinical onset
    - Non-fuctioning channel
  - SMEB had more missense mutations and a slightly later onset
    - Altered channel activity

Communication Model

- Speaking Situation
- Sender
- Encoding
- Message
- Channel
- Noise
- Receiver
- Decoding
- Feedback

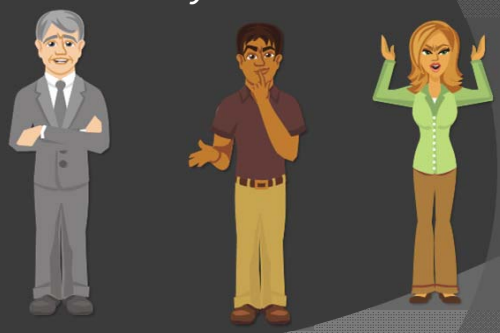


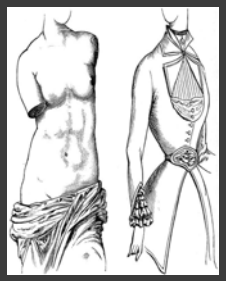
- Body language and paralanguage make up what is known as nonverbal communication

Types of Nonverbal Communication

- Bodily or kinesic behavior
- Physical qualities
- Touching behavior
- Paralanguage
- Proxemics
- Artifacts
- Environmental factors

Body Behavior





Physical Qualities

Touching Behavior

Paralanguage

Proxemics

Artifacts

Environmental Factors

In public speaking nonverbal communication is typically classified as "delivery criteria"

- Appearance: Professionally dressed and groomed.
- Diction: Speaking clearly.
- Volume: Can be heard from the back of the room.
- Speed: A good, conversational pace.

In public speaking nonverbal communication is typically classified as “delivery criteria”

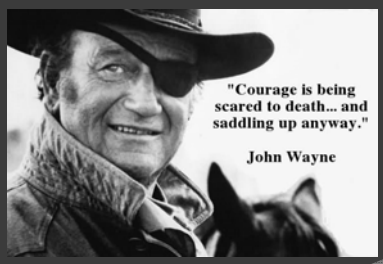
- Eye contact: Making eye-contact with the audience.
- Gestures: Appropriate use of gestures to augment speech.
- Posture: Confident, professional posture.
- Flow: How well the speech flows.
- Time: Proper management of allotted time.

Knowing your speaker

SPEAKER ANXIETY

“nervousness before or during an appearance before an audience”

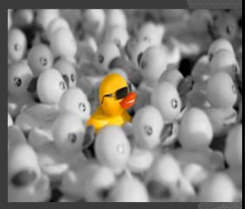
- In the United States, speaking publically is more feared than death.



Preparation builds confidence

Give Up Perfection

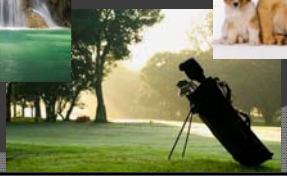
- Perfection is an illusion
- Perfection is annoying
- Be yourself



Chill Yourself

- Stop thinking about what might go wrong
  - Think of things that are calming are reassuring





Confident Posture

- Stand with confidence
- Fake it 'til you make it
- Pretend you're an expert
- Imagine you've done this a hundred times
- Hands by your side
- Smile at your audience

Tricks of the trade

Review

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References

- Booth-Butterfield, Melanie. Interpersonal Essentials. Allyn and Bacon, 2002.
- Klopf, Donald. Intercultural Encounters: The Fundamentals of Intercultural Communication, 5th Edition. Morton Publishing Company, 2001.
- Mebrabian, A. and M. Wilner. "Decoding Inconsistant Communications," Journal of Personality and Social Psychology, (1967), 6, 109-114.

Questions?