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## Evaluation of Child Abuse: Things Are Not Always What They Seem To Be

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### *Cognitive Errors*

- **Aggregate bias:** the belief that aggregate data do not apply to individual patients; problems arise when recommendations based on aggregate data are ignored leading to over ordering of tests
- **Anchoring:** tendency to lock onto initial impressions or specific details too early in diagnostic process; failing to adjust with new or conflicting data; confounds with confirmation bias
- **Ascertainment bias:** prior expectations drives decision making; examples including stereotyping and gender bias
- **Availability:** things that come to mind easily are more readily to be diagnosed; can occur due to common things being common or recent diagnosis of unusual entity; lack of availability can lead to misdiagnosis as occurs at the beginning of an outbreak or epidemic
- **Base-rate neglect:** the tendency to ignore the true prevalence of a disease; distortion of Bayesian reasoning; defensive medicine (*i.e.*, rule out worst case scenario) is example of base-rate neglect
- **Commission bias:** due to beneficence, tendency toward action over watchful waiting, less common than omission bias
- **Confirmation bias:** tendency to look for confirming evidence to support a diagnosis; failing to incorporate information that contradicts the diagnosis
- **Diagnosis momentum:** once a label is attached, there tends to be difficulty removing the label. Compounded by multiple healthcare providers passing the diagnosis on and lending strength to the assertion
- **Feedback sanction:** lack of timely feedback when a cognitive error occurs prevents information getting back to the decision maker resulting in lack of change for the patient or the decision maker.

- **Framing effect:** interpretation of information is strongly influenced by the frame it is presented in; relates to anchoring; negative frames vs. positive frames can drive diagnostic decisions
- **Fundamental attribution error:** tendency to be judgmental and blame patients for their illnesses rather than considering the situational or environmental causes; especially pronounced in minorities, psych patients, patients from different cultures, underprivileged patients
- **Gambler's fallacy:** failure to recognize the random distribution of independent events (*e.g.*, a person flipping a coin and getting 5 heads in a row will tend to believe that the next flip has to be tails even though each flip is independent). If a clinician sees a string of patients with the same diagnosis, tendency to believe the next one has to be something else (ignoring pre-test probability)
- **Gender bias:** tendency to believe gender is determining factor in a diagnosis when no pathophysiological explanation supports this (*e.g.*, heart disease in men, anxiety disorder in women)
- **Hindsight bias:** knowledge of the outcome influences our memories of past events
- **Multiple alternative bias:** the more on the differential diagnosis list, the more uncertainty; to deal with the uncertainty, some things are artificially eliminated from the list leading to inadequate consideration of the less common possibilities
- **Omission bias:** the tendency towards inaction (often due to principle of nonmaleficence).
- **Order effects:** the tendency to remember the beginning and the end; care must be taken to pay due attention to all information no matter the order it is received in
- **Outcome bias:** the tendency to make diagnostic decisions that will lead to good outcomes; the tendency to make decisions based on what we hope will be the outcome as opposed to what we hope it *won't* be. Ignoring worst case scenarios and making a favorable diagnosis instead
- **Overconfidence bias:** a tendency to believe we know more than we do. Too much stock in what we believe as opposed to what the evidence shows
- **Playing the odds:** when in doubt, diagnosing the benign or less serious based on the odds (opposite of the rule out worst case scenario)
- **Posterior probability error:** estimated likelihood of a disease is based on what has happened before for this patient (opposite of gambler's fallacy); (*e.g.*, this patient has had a migraine the last 5 times they were in therefore this headache is also likely due to a migraine), can cause missed diagnosis when the symptom can represent multiple conditions
- **Premature closure:** tendency to stop decision making process accepting a diagnosis before fully verified (related to anchoring)

- **Psych-out error:** the recognition of the fact that many psychiatric patients are especially vulnerable to cognitive errors by their providers due to fundamental attribution error—believing every symptom is related to their underlying psychiatric condition
- **Representativeness restraint:** diagnosing only typical presentations of conditions, not considering atypical presentations
- **Search satisfying:** tendency to stop looking when something is found; classic examples include fractures, other ingestions, foreign bodies; also an issue when nothing is found and there is no consideration for other possible locations
- **Sunk costs:** the more invested in a diagnosis, the less likely a clinician is to consider alternatives; sunk costs may be time, money or ego; tied to confirmation bias
- **Triage cueing:** the tendency for the diagnostic process to follow a path predetermined by triage labels; may come from patient, nurse, other physicians
- **Unpacking principle:** failure to elicit all relevant information; limits in history taking or history giving (by patient) lead to other possibilities not being considered
- **Vertical line failure:** the tendency to repetitively follow the same path leading to inflexible thinking
- **Visceral bias:** “gut feelings”; positive or negative feelings towards a patient may influence diagnosis
- **Yin-Yang out:** to decide that nothing further can be done to make the diagnosis because the patient has already been worked up the Yin-Yang