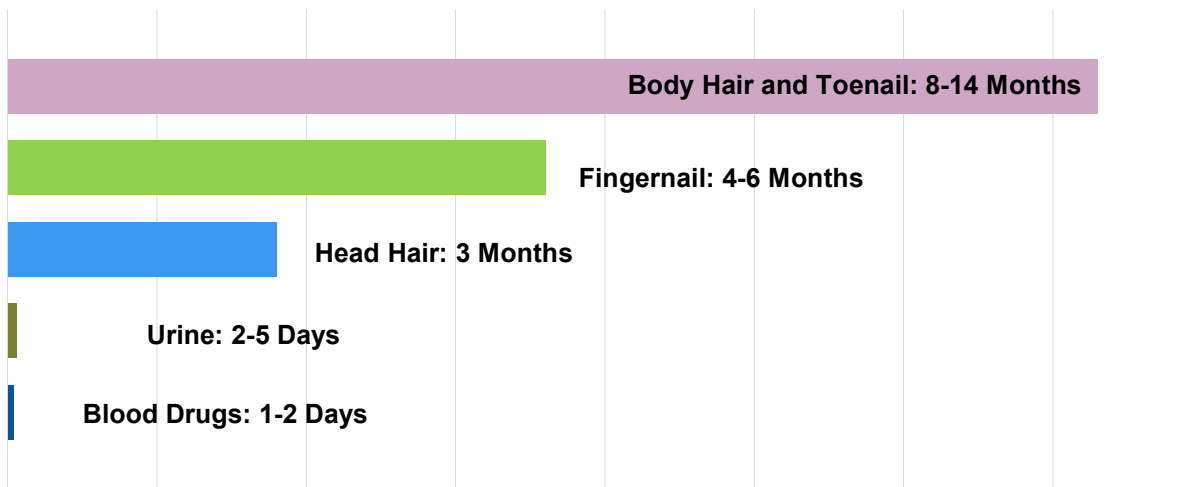


# Detection Windows and Limitations of Interpretation

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## Detection Windows Most Drugs

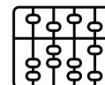


## Detection Windows Alcohol Biomarkers



## The Standard Response

When testing a **reservoir** specimen type, a specimen where analytes tend to accumulate –such as hair, nail, and even urine- we are not able to backtrack to determine **time**, **dosage** or **frequency**



## Why? There are Many Variables

- Time of the last dose
- Size of the dose
- Frequency of use
- Hair color
- Type of hair
- Location of hair
- Hygiene
- Cosmetic treatment
- Individual differences



## Limitations Due to Hair Color

### Zolpidem

- 10 mg daily
- 3 days
- Separated by color



*Villain et al (2004) For Sci Int, 143, 157-161.*

## Limitations Due to Hair Color

### Zolpidem

White hair 0.4 pg/mg  
Black hair 39.7 pg/mg



*Villain et al (2004) For Sci Int, 143, 157-161.*



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## Quantitative Values - Reservoir Specimen Conclusions

### Cannot:

- × Determine time, dose, or frequency
- × Determine if used as prescribed or abused
- × Determine if used a lot or a little
- × Follow the numbers down

