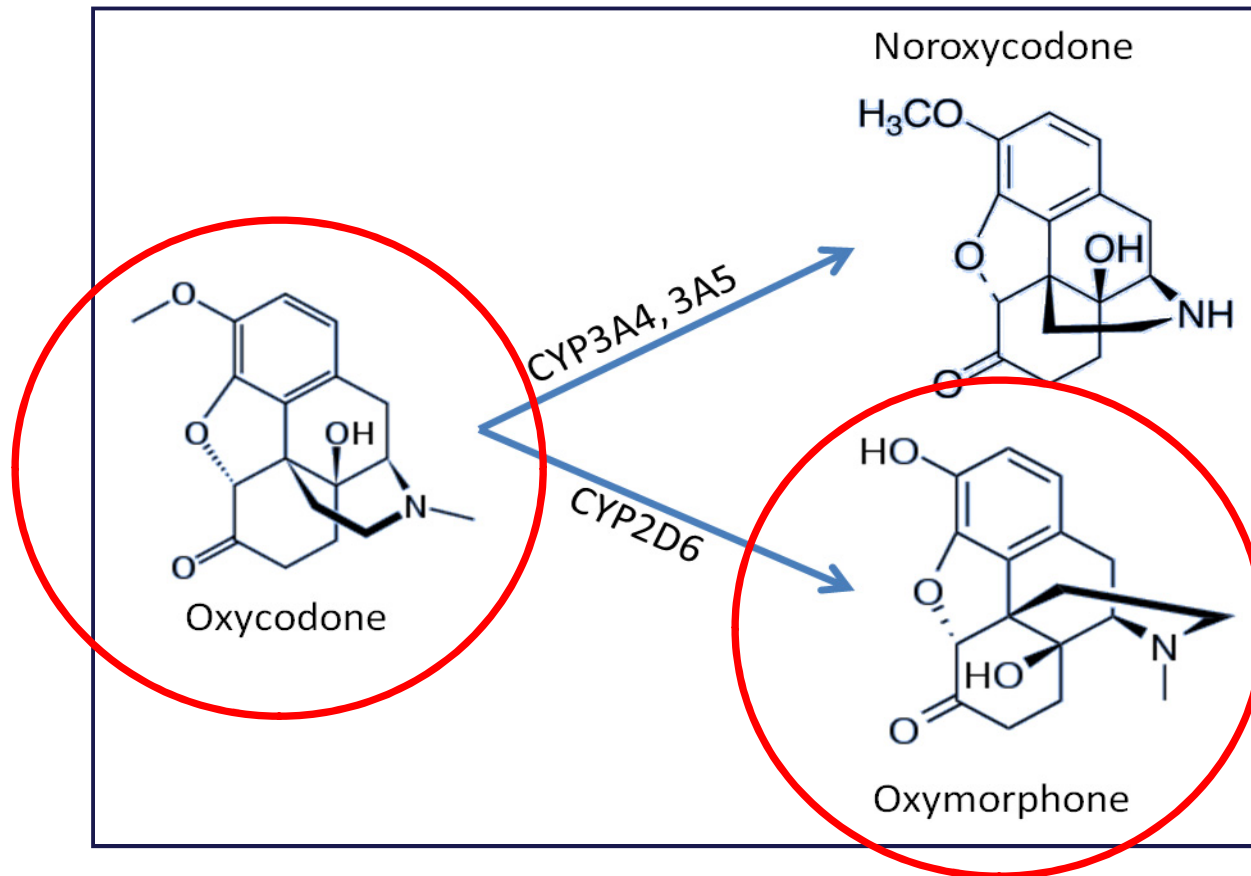


# Observations on the Urine Metabolic Ratio of Oxymorphone to Oxycodone in Pain Patients

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## Oxycodone Metabolism



metabolic ratio= [oxymorphone mg/g creatinine] / [oxycodone mg/g creatinine]

## Glucuronidation of Oxycodone and Oxymorphone

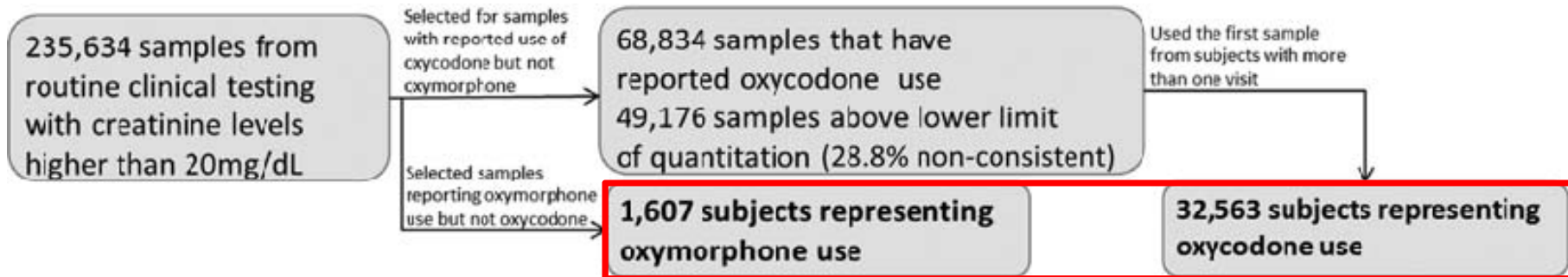
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Percent Glucuronidated Oxycodone and Oxymorphone from 115 Subjects

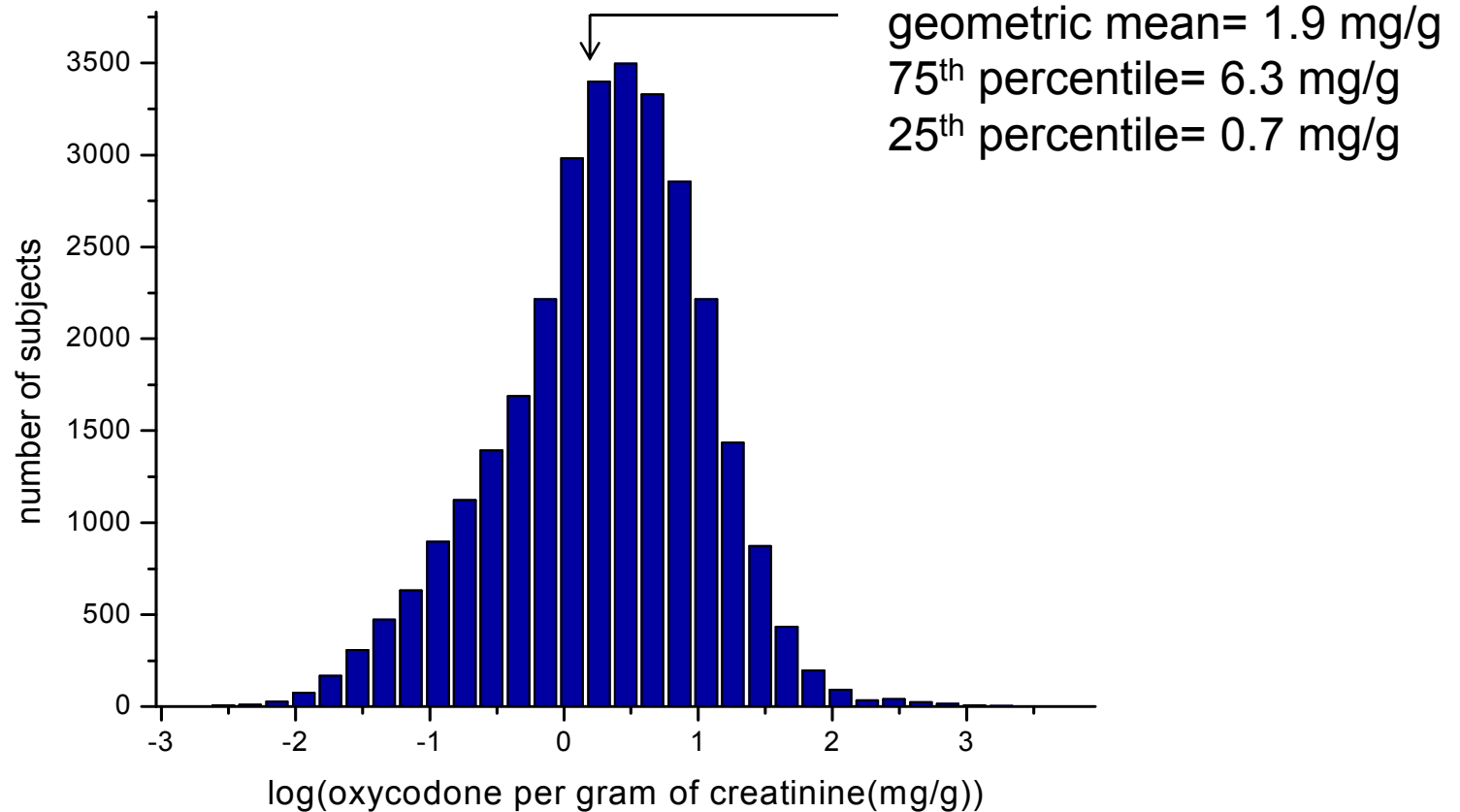
	Oxycodone	Oxymorphone (oxycodone use)	Oxymorphone (oxymorphone use)
Mean	3.05	93.16	99.11
Median	4.49	97.32	100.00
Skewness	-1.68	-4.33	-1.97
75th percentile	10.83	100.00	100.00
25th percentile	-3.59	94.70	98.77
Standard deviation	12.92	16.97	1.65

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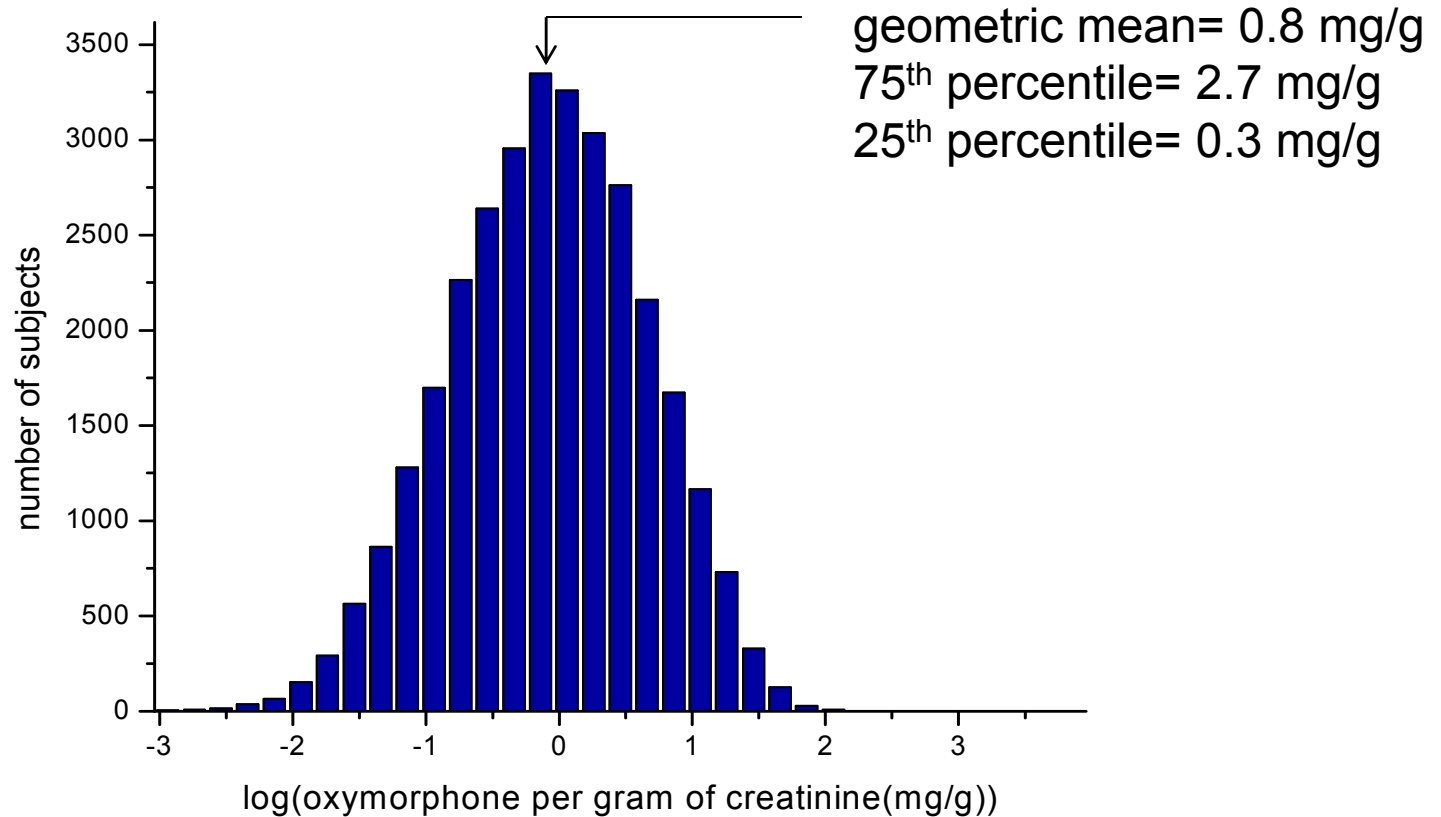
# Sample Selection



## Oxycodone Distribution



## Oxymorphone Distribution



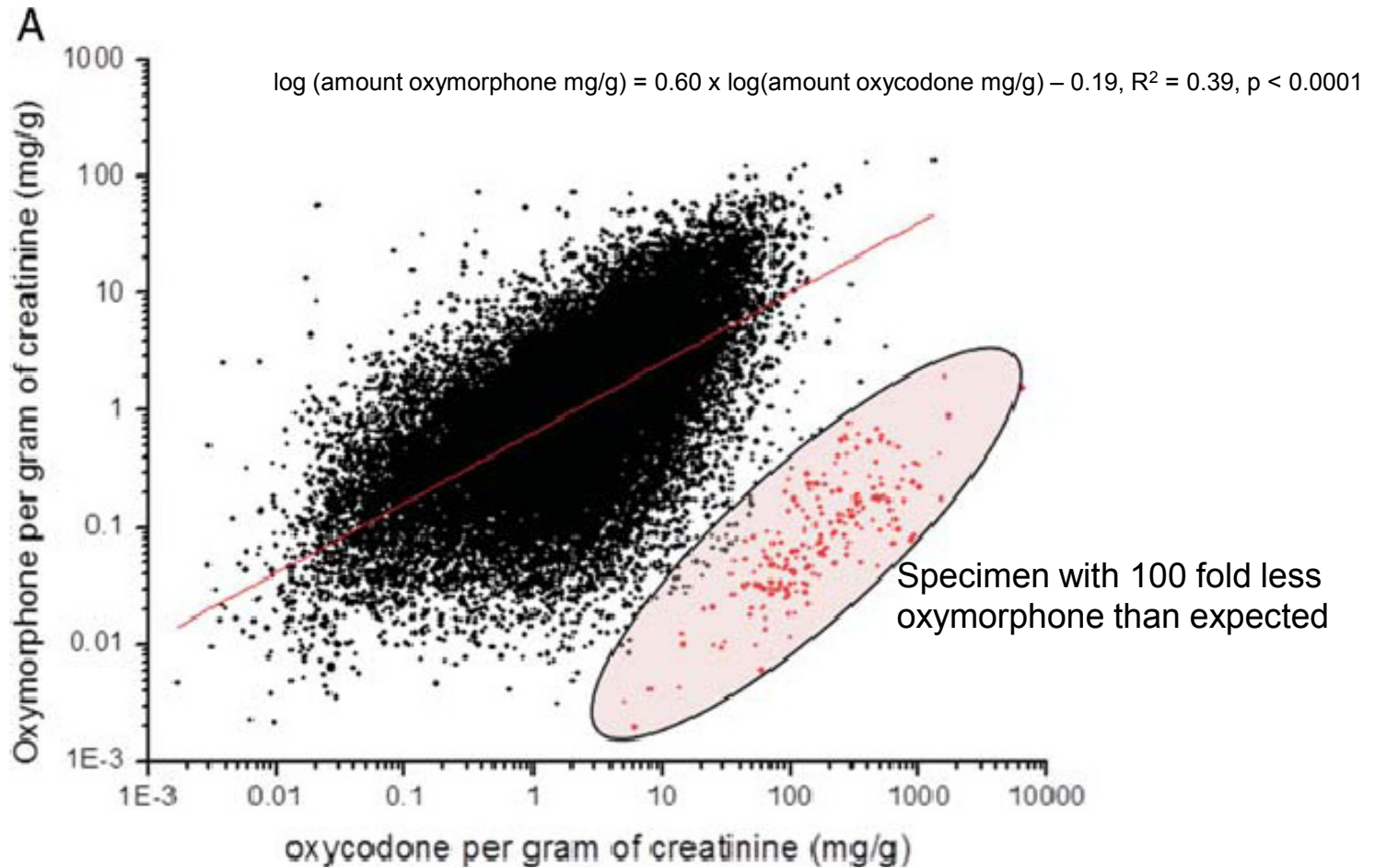
# Distribution Statistics

**Table I**

Statistical Data Generated from Population Distributions of Both Urine Concentrations and their Corresponding Values Normalized Using Creatinine Values

	Oxycodone (ng/mL)	Oxymorphone (ng/mL)	Oxycodone (mg/g) Creatinine corrected	Oxymorphone (mg/g) Creatinine corrected
Number of non-zero measurements	30,455	31,473	30,455	31,473
Mean	9,015	3,092	7.8	2.8
Geometric mean	1,998	846	1.9	0.8
Standard deviation	35,040	6,858	50.4	5.9
Geometric standard deviation	6.2	5.5	5.6	5.4
Median	2,244	876.3	2.2	0.9
Skewness	-0.2	-0.1	-0.4	-0.2
75th percentile	71,067	2,816	6.3	2.7
25th percentile	607.3	257.6	0.7	0.3

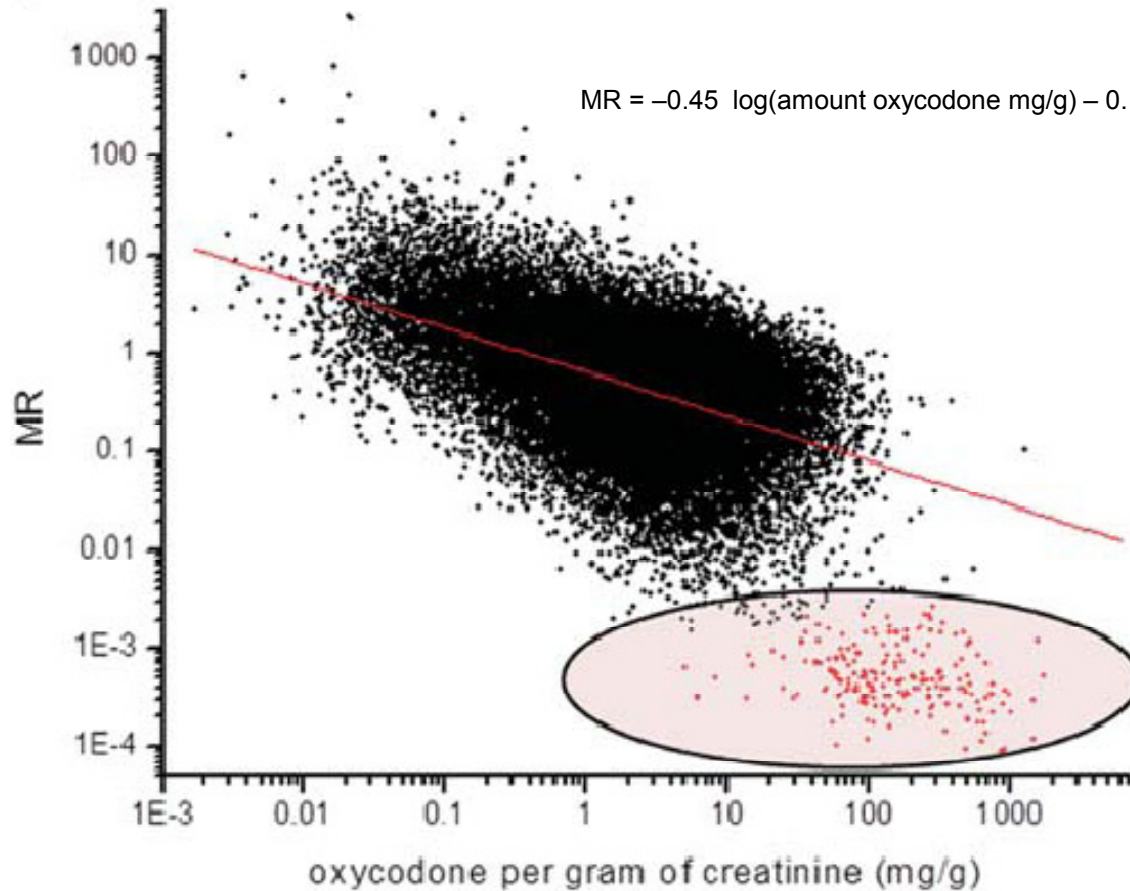
# Oxycodone vs. Oxymorphone



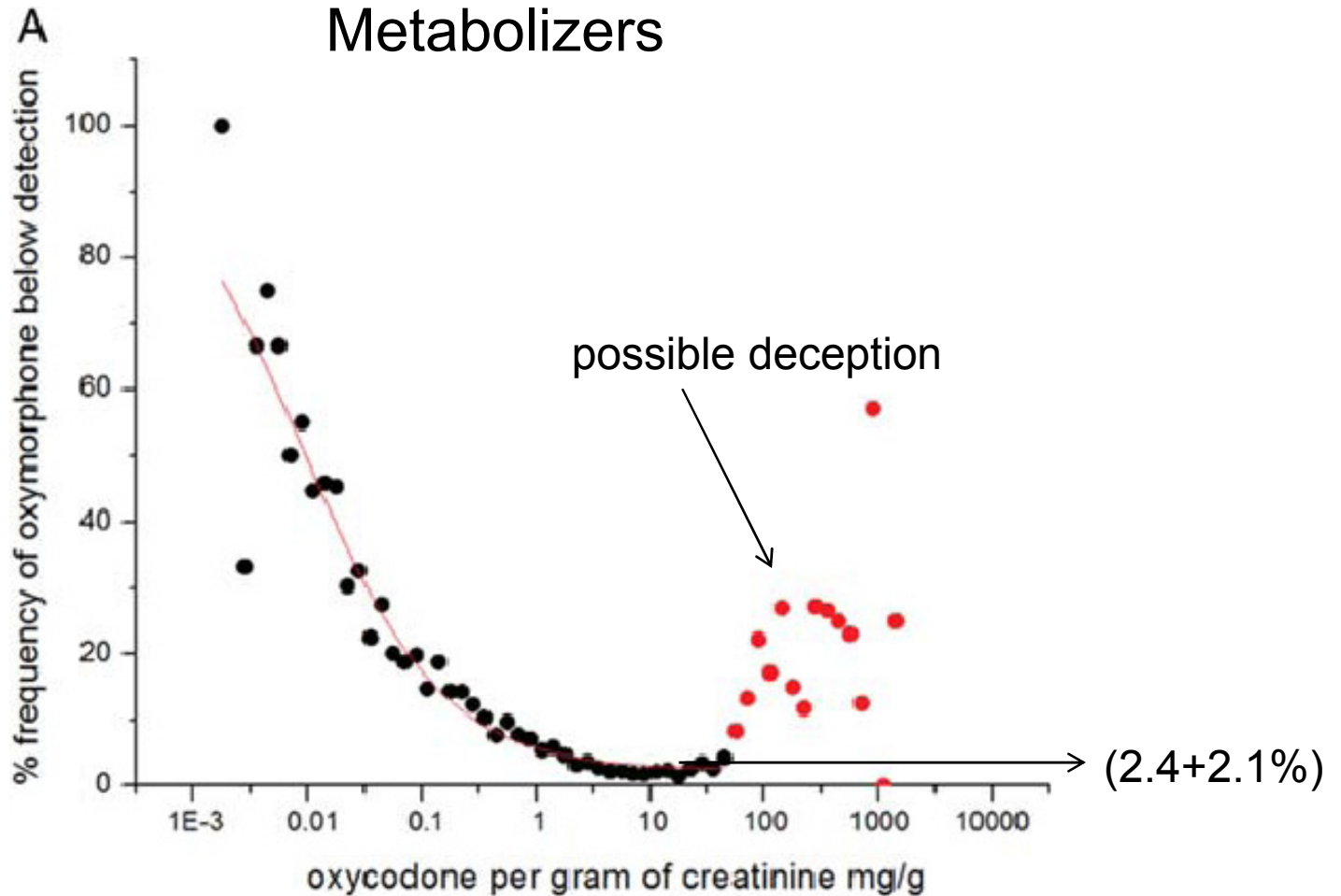


# Oxycodone vs. Metabolic Ratio

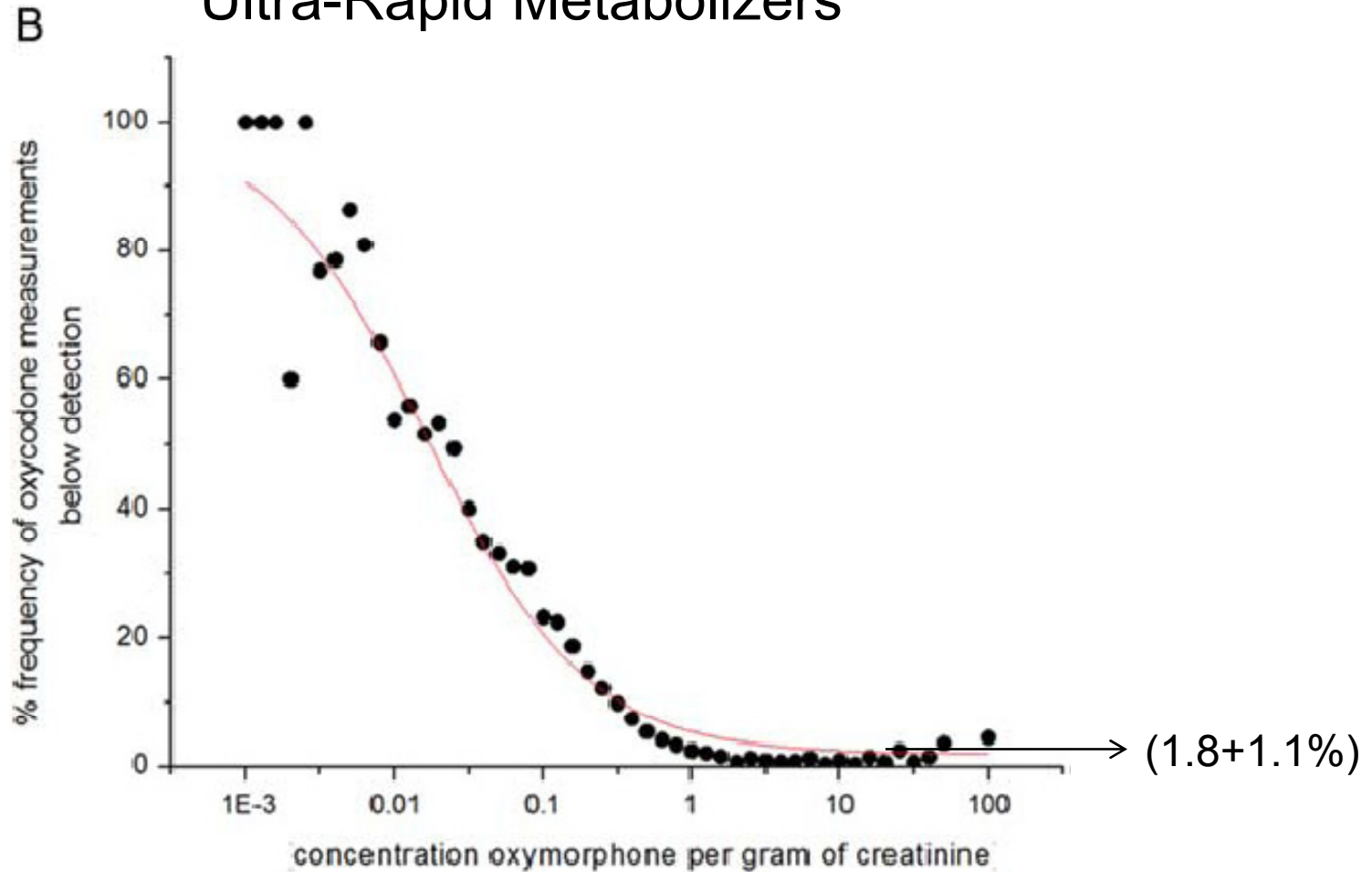
B



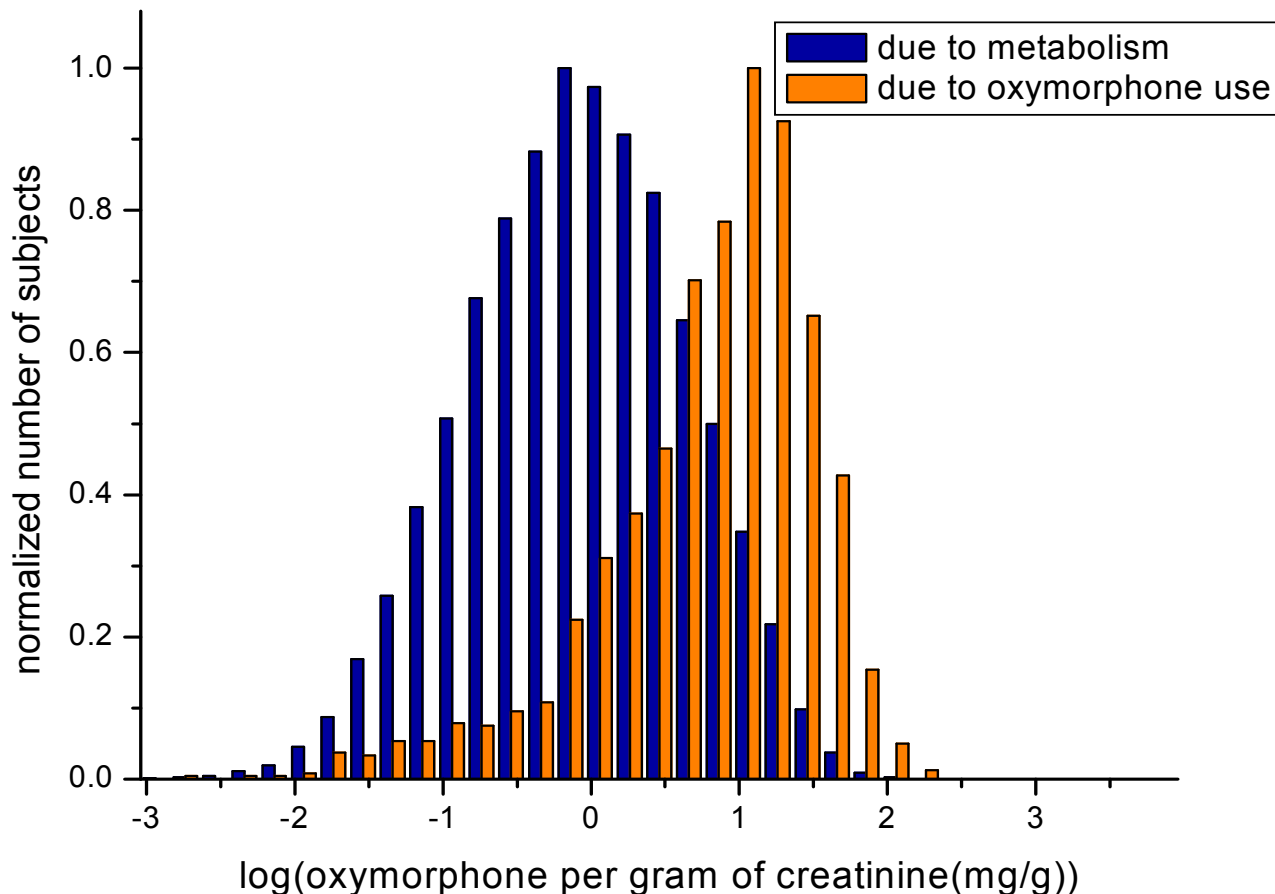
## Estimation of the Proportion of Poor Metabolizers



# Estimation of the Proportion of Ultra-Rapid Metabolizers



## Oxymorphone from Metabolism Compared to Oxymorphone as a Medication



## Limitations

- This was a retrospective analysis conducted on urine specimens submitted for “medication” monitoring from “physicians’ offices”.
- Dose and time after dose were unknown.
- Liver and renal status of subjects in the population is unknown.
- Reported medications are listed by physicians that may, if not accurate, misrepresent subjects.
- Although these factors will affect metabolism and excretion of oxycodone, the data set was used to represent the pain patient population as a whole and no inferences about individual subjects were made.
- More clinical data is needed for interpretation of clinical effects of results presented.

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Elder, Sophie Bordson

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Millennium Laboratories & Millennium Research Intsitute

# Questions

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