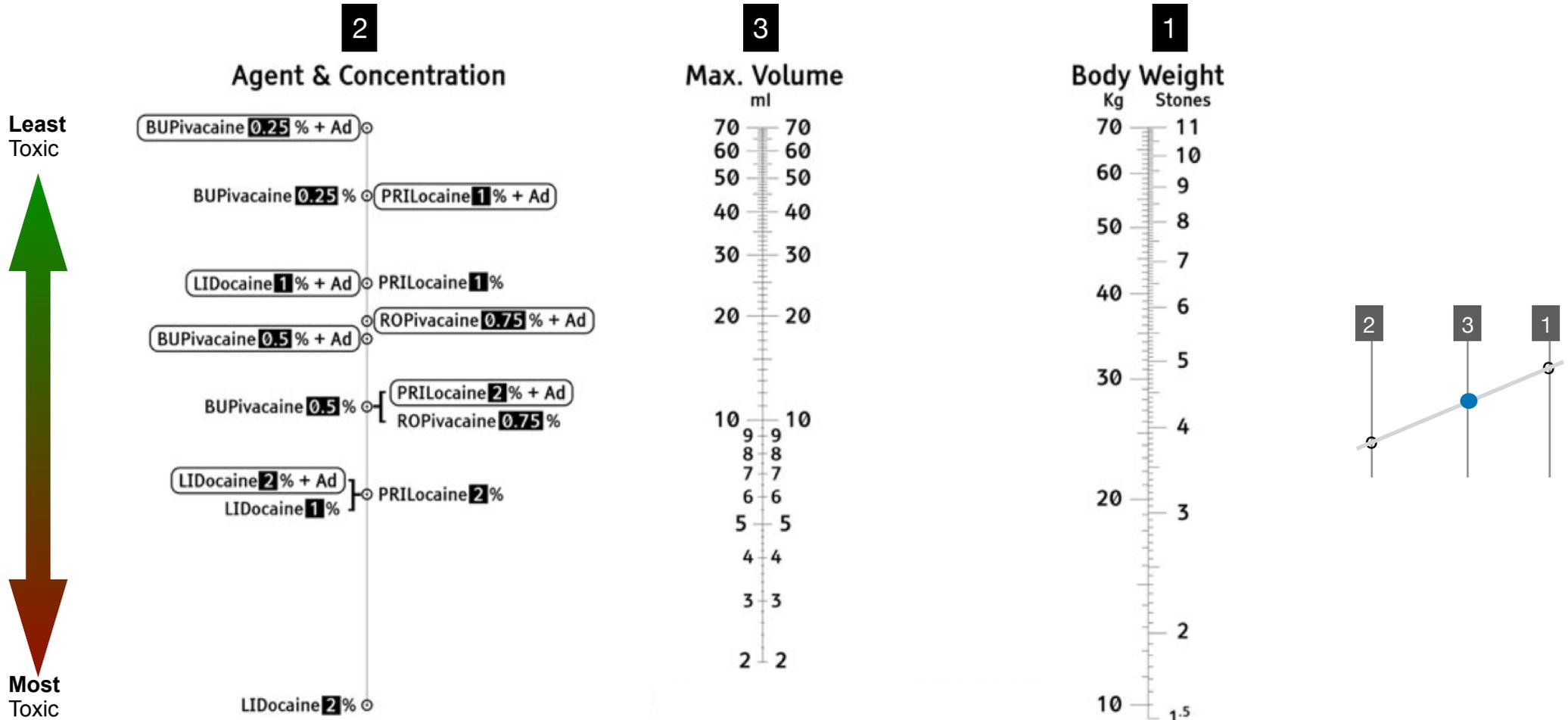# APPENDIX 9
Local Anaesthetic Safety Calculations*
(maximum safe amount administered within an 8 HOUR period)
(from Williams DJ, Walker JD. A nomogram for calculating maximum dose of local anaesthetic. Anaesthesia 2014)

HOW TO USE THIS NOMOGRAM: Take a ruler or straight edge. Place one end on scale **1** on the relevant value for the patient's body weight. Place the other end on line **2** crossing the preferred local anaesthetic agent & concentration. The maximum volume in millilitres that can be safely administered is shown where the straight line crosses the middle scale (marked **3**). For patients > 70 Kg, use 70 Kg; for obese patients, use ideal body weight. If body weight or maximum volume values fall between scale graduations, use next LOWEST values on each scale. **This nomogram is a guide and does not replace calculations for maximum dose toxicity**. See table on following page for guidance with this calculation.

*Ropivacaine 0.2% is the preferred agent in Wellington for local anaesthetic wound catheters. See next page for specific dosing guidelines.

ROPIVACAINE 0.2% DOSING: This is the preferred local anaesthetic agent for administration through wound catheters (usually rectus sheath catheters) in Wellington Regional Hospital. **Ropivacaine 0.2% contains 2 mg /ml**. The **maximum safe dose in 24 hours is 8 mg / kg** (consider reduction in elderly patients). Follow steps 1-4 below to prescribe ropivacaine safely:

1 Calculate the **24 hour maximum safe volume** based on the patient's weight using the table:

2 Divide this volume by **4** to give the volume to be administered **every 6 hours**

PATIENT WEIGHT (Kg):	40-49	50-59	60-69	70-79	80-89	90-99
Max volume 0.2% ropivacaine (ml per 24 hrs)	160-180	200-220	240-260	280-300	320-340	360-380

3 Divide this volume by the **number of wound catheters** to give the **volume per catheter** every 6 hours

4 Prescribe '**Ropivacaine 0.2% q6 hrly via wound caths**' with the volume calculated in step 3

....

SAFELY DOSING OTHER LOCAL ANAESTHETIC AGENTS: Use the table below to calculate the maximum safe dose for other local anaesthetic agents in both plain preparation and preparations with adrenaline added. This is the maximum safe dose that can be administered **every 8 hours (TDS). The maximum stated dose assumes normal plasma protein binding, normal hepatic & renal function, and no interactions with other co-administered drugs.** If variants in these factors are known or suspected then the administered dose should be reduced accordingly. Dose reduction should also be considered in elderly patients.

DRUG	Maximum 8 HOURLY DOSE (mg/kg)	
	PLAIN	**WITH ADRENALINE**
LIDocaine	3	7
BUPivacaine	2	2.5
PRILocaine	6	9
ROPivacaine	3	4

See Appendix 10 for assistance in calculating drug concentrations from solutions expressed in percentages.