

Appendix 1. Patient decision aids (English version).



## Which reversal muscle relaxant agent should I choose after general anesthesia?



### The process of general anesthesia

During general anesthesia, anesthesiologists usually administer a muscle relaxant to make sure the patient is paralysed rapidly. This enables them to safely perform endotracheal intubation, which helps the operation process. After completion of the surgery, anesthesiologists administer a muscle relaxant reversal agent at the appropriate time to reverse residual paralysis under natural metabolism, thereby helping the patients gain their baseline muscle power.



### Traditional type of reversal agents

Traditional reversal agents improve the patients' recovery from paralysis but take longer to complete reversal. They are also associated with more frequent incidence of complications, including residual paralysis, which cause delayed extubation and related complications, vomiting, blurry vision, abdominal cramping, bradycardia, and even cardiac arrest.



### What is sugammadex

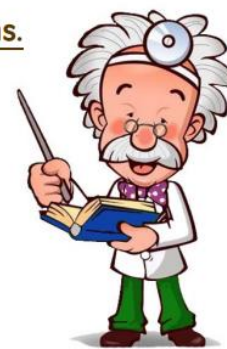
Sugammadex is a newer muscle relaxant reversal agent that acts directly against muscle relaxant molecules in the plasma, thus helping the patients to rapidly and safely regain their muscle power. This eliminates the risk of residual paralysis due to high-dose muscle relaxants.



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Neostigmine (traditional type)	Comparison	Sugammadex (new type)
Increases neuromuscular transmitter concentration, stimulates muscle contraction	Mechanism	Combines directly with and blocks the muscle relaxant
Slow (7.5–10.8 min)	Time to meet 90% recovery of muscle power	Rapid (1.6–2.2 min)
High	Incidence of residual paralysis	Extremely low
High	Incidence of respiratory complications	Low
More common	Risk of bradycardia or hypotension	Nearly none
High	Postoperative nausea or vomiting	Low
High	Postoperative dry mouth	Low
Headache, urinary retention, blurry vision, diarrhea	Other adverse effects	Dysgeusia, oral contraceptives dysfunction, headache
End-stage renal disease	Highly suggestive situations	Older adults, obesity, endoscopy surgery, fine surgery (brain, eye, and spinal cord)
None	Contraindications	End-stage renal disease
Included in Taiwan's National Health Insurance	Fee	Self-paid (6000–9000 NTD)

**Please answer the following questions to help you make your decisions.**



**A. How much do you know about the reversal agents now?**

- a. Newer reversal agents, such as sugammadex, can reverse the paralysis status faster and completely.     Yes     No     Not sure
- b. Traditional reversal agents, such as neostigmine, affect the cardiovascular system more than sugammadex.     Yes     No     Not sure
- c. Newer reversal agents, such as sugammadex, have a lower incidence of adverse effects.     Yes     No     Not sure

**B. Which parts do you care about the most during medical intervention?**

➤ 1 is 'not at all important' and 5 is 'very important.'

	5	4	3	2	1
<b>Time to recover</b>					
<b>Incidence of residual paralysis</b>					
<b>Cardiovascular adverse effects</b>					
<b>Economical concern</b>					

**C. Do you receive enough support during decision-making?**

- a. I need to discuss this with my family sufficiently.     Yes     No
- b. I need to make sure if my health insurance includes the self-paid medications.     Yes     No
- c. I have already received sufficient information for my decision after consulting with the physicians.     Yes     No

**D. Your decision.**

- Use sugammadex, the newer reversal agent.
- Use neostigmine, the traditional reversal agent.
- I can't make my decision now and need to discuss more with my physician.

**E. References**

- a. The comparative efficacy and safety of sugammadex and neostigmine in reversing neuromuscular blockade in adults. A Cochrane systematic review with meta-analysis and trial sequential analysis. *Anaesthesia* 2018, 73: 631-41.
- b. Efficacy and safety of sugammadex versus neostigmine in reversing neuromuscular blockade in adults. *Cochrane Database of Systematic Reviews* 2017, Issue 8. Art. No.: CD012763.