

Appendix 1. The primary surgeon is leaning to left with weight bearing on left leg with excessive neck flexion. The assistant on the patient's left has trunk flexion, left neck deviation, and weight bearing on the left leg due to height discrepancy and poor visualization.



Yurteri-Kaplan LA and Park AJ. Surgical ergonomics and preventing work-related musculoskeletal disorders. *Obstet Gynecol* 2023;141.

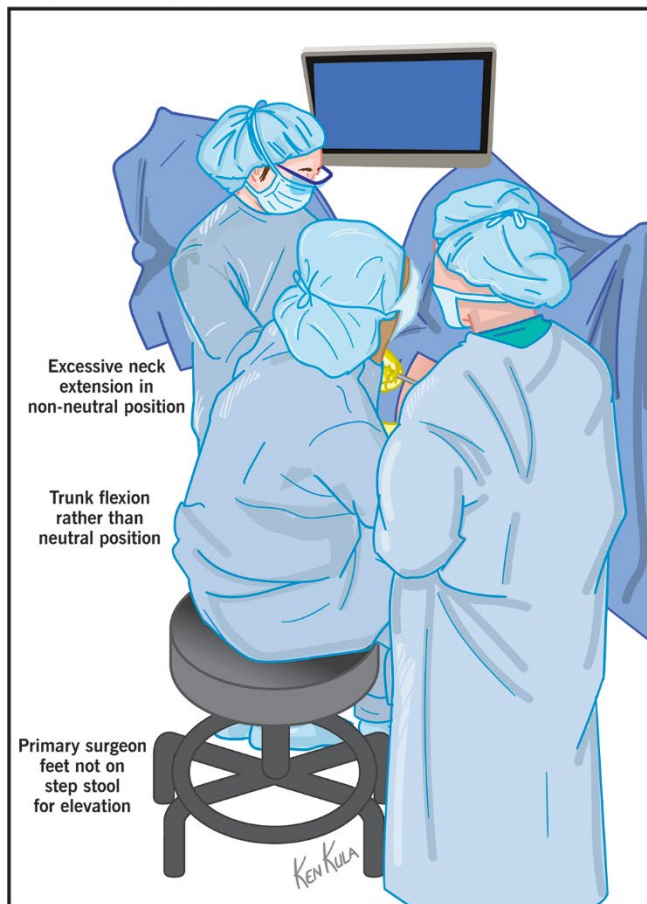
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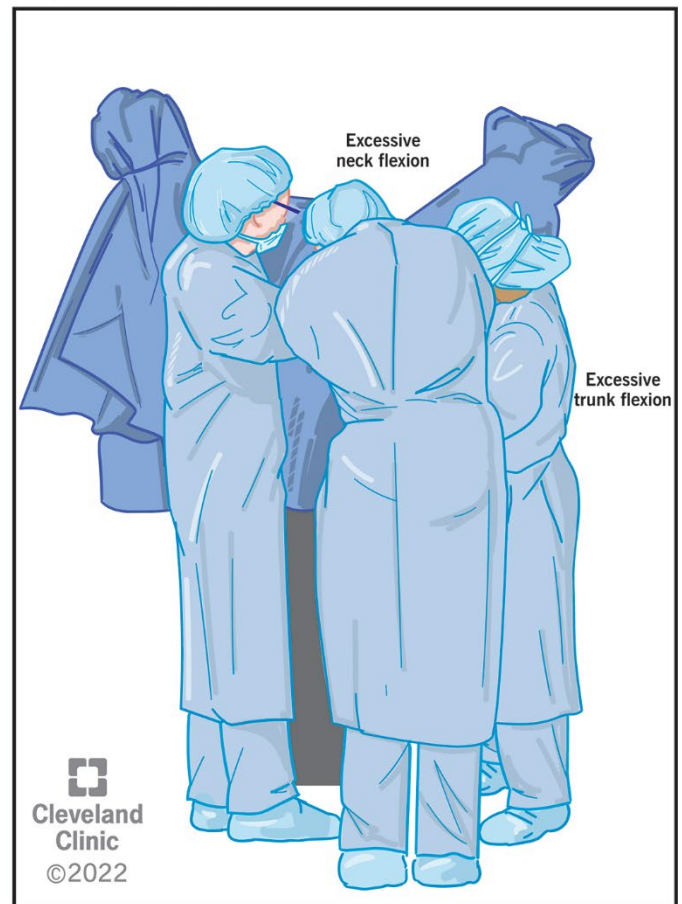
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Appendix 2: This is a cartoon depiction of incorrect ergonomic vaginal surgery. In the seated picture, the primary surgeon is trunk flexed forward and neck in excessive extension. There is no step stool to assure the seated surgeon has knees at 90°. There is significant difference in height between seated and standing surgeons causing assistants to have extreme neck flexion to see the surgical field. In the standing vaginal surgery cartoon the primary surgeon is significantly taller than the assistant surgeons causing the primary surgeon to flex trunk forward as well as neck. This causes less room to view the surgical field and thus the assistant on the left side of the patient is also flexed forward and weight on the left leg rather than evenly distributed. Reprinted with permission, Cleveland Clinic Foundation ©2022. All rights reserved.

Vaginal surgery (seated) - Incorrect



Vaginal surgery (standing) - Incorrect



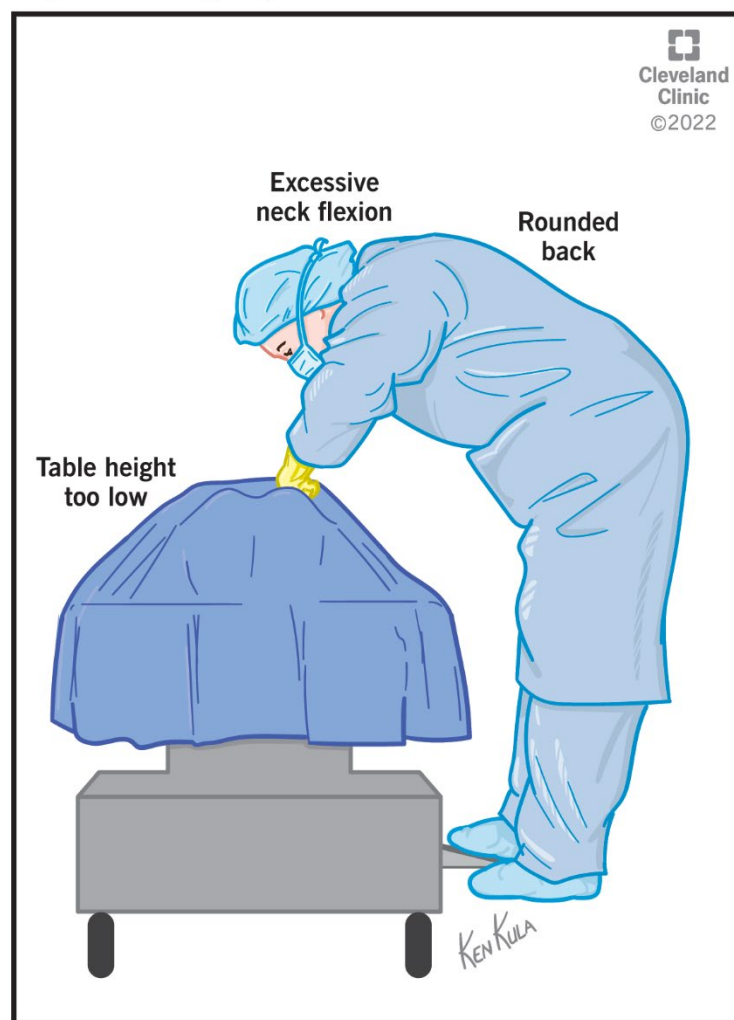
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Appendix 3: This is a cartoon depiction of incorrect ergonomic open surgery. The surgeon is trunk flexion forward with excessive neck flexion. This is due to incorrect table height. Reprinted with permission, Cleveland Clinic Foundation ©2022. All rights reserved.

Open surgery - Incorrect



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Appendix 4: This laparoscopic surgeon is excessively torqued with back flexion and neck extension, due to inappropriate table and monitor height.



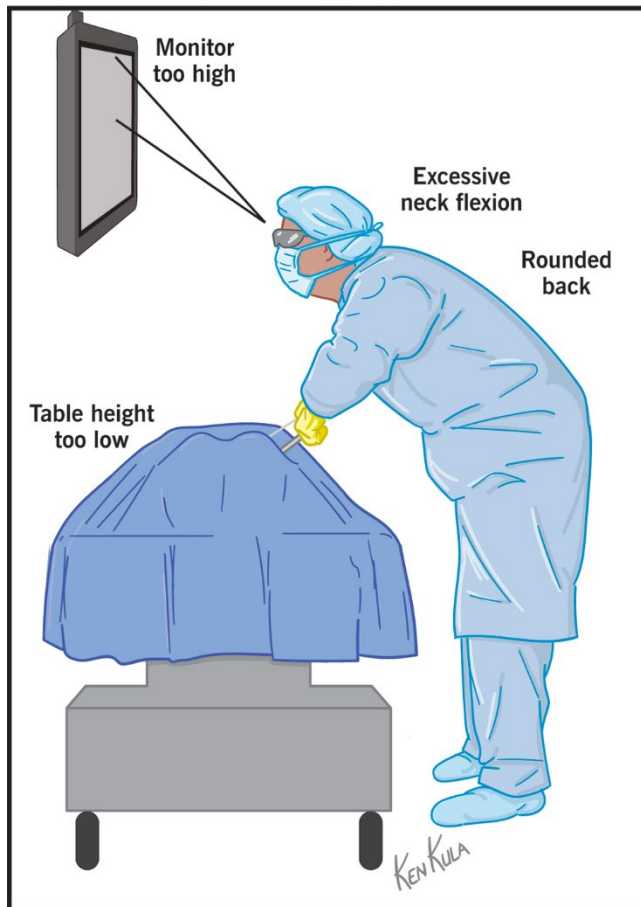
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Appendix 5: This is a cartoon depiction of incorrect ergonomic laparoscopy surgery. There is inappropriate screen and table heights causing neck extension and trunk flexion on the right. When correcting for inadequate trocar placement, the surgeon demonstrates shoulder abduction and extreme wrist movement for fulcrum effect. Reprinted with permission, Cleveland Clinic Foundation ©2022. All rights reserved.

Laparoscopic surgery - Incorrect

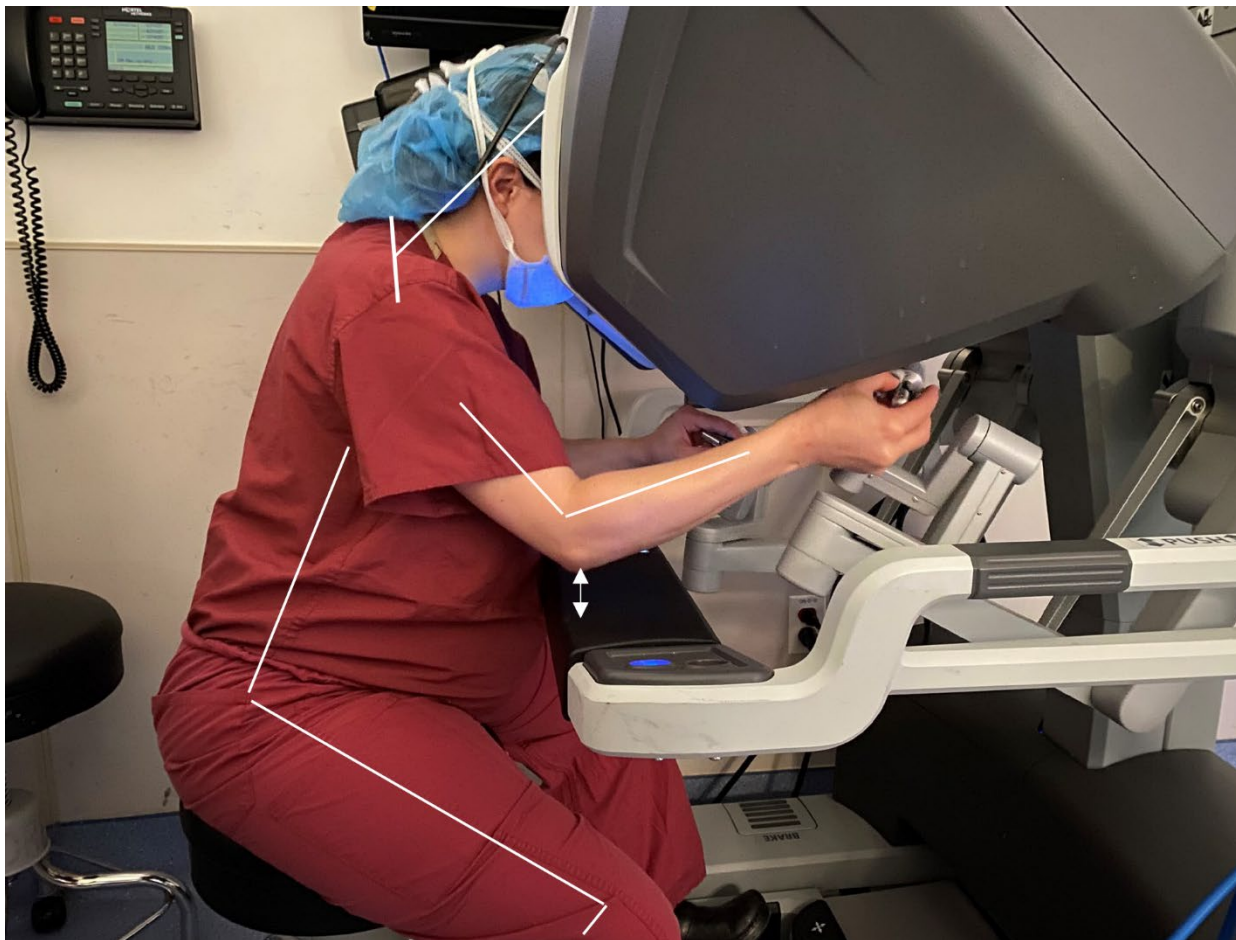


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Appendix 6: This pregnant surgeon is pressing her forehead into the robotic console in excessive neck flexion, resulting in cervical strain. Her elbows are elevated off the armrest, resulting in lack of support for the elbows and shrugging of the shoulders, which causes neck muscle strain. The elbows should rest on the platform, at a 90–120° angle, with the shoulders relaxed. There is no back to the stool, resulting in back flexion and lumbar disc strain. The height of the stool and the foot console platform are inappropriately low. The angle of the hips and the knees should be perpendicular, in order to maintain the neutral position. The stool should be in the locked position, or have a rolled blanket behind the stool wheels, in order to prevent the surgeon from inadvertently pushing away from the console during surgery.



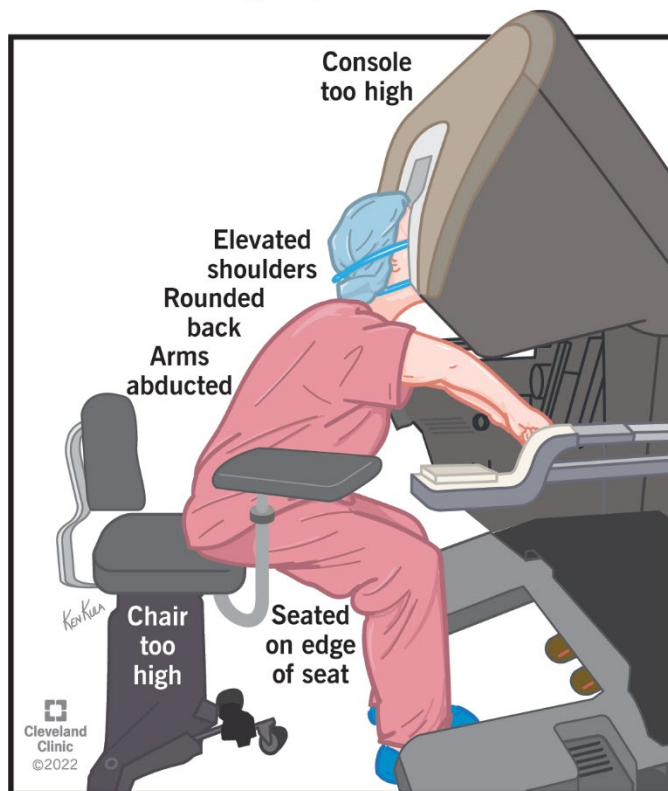
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Appendix 7: This is a cartoon depiction of incorrect ergonomic positioning of a robotic surgeon. The chair is too high, preventing the robotic surgeons' knees to be in a 90° position. The surgeon is seated on the edge of the seat, often leading to numbness of the legs at the end of the case. Shoulders are abducted while trunk is flexed. The neck is extended due to high viewing from the console. Reprinted with permission, Cleveland Clinic Foundation ©2022. All rights reserved.

Robotic surgery - Incorrect



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