

## Original article

# The Evaluation of Doctors and Nurses Opinions Regarding Bed Rest and Semi-Recumbent Position

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## ÖZET

### Yatak istirahati ve yarı oturur pozisyon hakkında doktor ve hemşirelerin görüşlerinin değerlendirilmesi

**Amaç:** Sağlık personelinin yaygın hastalıklarda imobiliteyi tercih edip etmediği, erken mobilizasyon ve yarı oturur pozisyon hakkındaki bilgilerini araştırdık.

**Materyal ve Metot:** Bu ankete 556 kişi katıldı. Bunlar 55 aile hekimi, 62 cerrahi olmayan (dahili bölüm), 47 cerrahi branş uzmanı, 75 aile hekimliğinde çalışan hemşire, 159 dahili ve 158 cerrahi serviste çalışan hemşireydi. Akut miyokard enfarktüsü, akut bel ağrısı, kardiyak kateterizasyon ve karaciğer biyopsisi sonrası, total diz replasmanı sonrası ve inmede yatak istirahati hakkında sorular ilk grupta soruldu. İkinci grupta yarı oturur pozisyon bilgilerine dair sorular soruldu.

**Bulgular:** Sağlık personeli, akut bel ağrısı ve total diz replasmanı sonrası kısa süreli yatak istirahati önermişti. Oysa miyokard enfarktüsü, kardiyak kateterizasyon ve karaciğer biyopsisi sonrası sağlık personelinin %50 den fazlası uzun süreli yatak istirahati önermişti. Uzman doktorlar inmede erken mobilizasyonu önermelerine rağmen, diğer sağlık personelinin büyük kısmı uzun süreli yatak istirahatını desteklemişti.

**Sonuç:** Sağlık personeli uzun süreli yatak istirahati eğiliminde iken erken mobilizasyona sıcak bakmamaktadır.

**Anahtar Kelimeler:** Yatak istirahati; erken mobilizasyon; imobilite

## ABSTRACT

**Objectives:** We investigated healthcare personnel knowledge of commonly illnesses in which bed rest is often preferred, and their opinion about early mobilization, bed-rest duration and putting patients in the semi-recumbent position.

**Material and Method:** 556 persons who agreed to participate were included in the questionnaire. They were 55 family physicians, 62 nonsurgical and 47 surgical specialists, 75 family practice nurses, 159 nonsurgical and 158 surgical clinic nurses. The questions were asked about the bed-rest duration of uncomplicated acute myocardial infarction, acute lower back pain, and cardiac catheterization and after liver biopsy, start mobilization after a total knee replacement and stroke. In the second group questions were asked about their acknowledgment of semi-recumbent positioning.

**Results:** The majority of healthcare personnel suggested the short-term bed rest in acute low back pain and after a total knee replacement, whereas the approximately more than 50% of healthcare personnel supported the long-term bed-rest in myocard infarction, after cardiac catheterization and liver biopsy. Although specialists encouraged early mobilization in stroke, the most of the other healthcare staff proposed long period bed rest in this event.

**Conclusion:** Healthcare providers did not agree with early mobilization, and tended to lean towards the practice of a long period of bed rest.

**Key Words:** Bed rest; early mobilization; immobility

## INTRODUCTION

Bed-rest is often used by patients, their relatives and health personnel as a treatment modality. It is believed by many people that a prolonged period of bed-rest is good after many illness and interventional procedures. These views of patients and their relatives either voluntary or involuntary are supported by healthcare providers.

A prolonged period of bed-rest and immobility affects all systems; i.e. mainly the cardiovascular, endocrine and musculoskeletal systems<sup>1-4</sup>.

This effect is more prominent in geriatric patients who have longer periods of bed-rest than younger ones<sup>5</sup>. Bed-rest, which is longer than the normal period after some medical procedures can harm patients as much as some illnesses.

In some situations which require necessary bed-rest such as critical care units, it is very common practice that elevation of the head of the bed can be raised from 30 to 45 degrees<sup>6</sup>. This application is used to prevent bacterial and aspiration pneumonia, which is related to the critical care units. Since it reduces the risk of pneumonia, it is also used to reduce mortality, morbidity, and cost, especially in patients who have need of respiratory assistance, or enteral feeding<sup>6,7</sup>.

The benefit of early mobilization and the harming effect of prolonged bed-rest should be known by all healthcare providers. In this study

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Arrival date : 11.10.2012  
Acceptance date : 05.11.2012

we investigated the healthcare providers' knowledge of commonly illnesses in which bed rest is often preferred, and their opinion about early mobilization, bed rest duration and putting patients in the semi-recumbent position, in the eastern black sea region of Turkey, in and around the city of Rize.

## **MATERIAL and METHOD**

### **Participants**

The questionnaire was conducted in May 2012 in the eastern black sea region of Turkey, mainly in the Recep Tayyip Erdogan University Medical School Hospital, and in the surrounding hospitals and family practice centers which were accessible, and was given to the medical doctors and nurses who agreed to participate. The questionnaires were performed by investigators using a face to face interview method. Family physicians and family practice nurses who attended this study have been working in the first step healthcare institutions. The second and third step healthcare institution participants were nonsurgical specialists (internist, neurologist, cardiologist, chest specialist and gastroenterologist), surgical specialists (general surgeon, orthopedist, urologist, and neurosurgeon), nonsurgical clinic nurses and surgical clinics nurses.

Among 671 interviewed subjects, 556 persons who agreed to participate were included in the questionnaire, respectively they were 55 family physicians, 62 nonsurgical specialists, 47 surgical specialists, 75 family practice nurses, 159 nonsurgical clinic nurses and 158 surgical clinic nurses. The total participation was 164 medical doctors and 392 nurses. The demographic data of the questionnaire participants are shown in Table 1.

### **Data collection and ethical issues**

The questionnaire questions divided into 2 groups, with 2 or 3 answer options. In 2003 the study questions set by Aydin and Cure in the Süleyman Demirel University Faculty of Medicine were used as a source to create the questionnaire<sup>8</sup>.

According to the literature 1-2 questions were added to the reference questionnaire. In the first group 6 questions were asked about the bed-rest duration of uncomplicated acute myocardial infarction, acute lower back pain, and cardiac catheterization and after liver biopsy. Their opinions were asked regarding when to start mobilization after a total knee replacement and stroke. In the second group the healthcare providers were asked about their acknowledgement of semi-recumbent positioning.

The questionnaire's questions are given in Appendix 1.

The study was approved by the local ethics committee at the Recep Tayyip Erdogan University, School of Medicine, and all participants signed an informed consent. (Approval number's: 2012/75)

### **Statistics**

The data was analyzed with the SPSS 13.0 software program (SPSS Inc., Chicago, Illinois, USA). Statistical analyses were evaluated with k-square and Fisher's exact k-square tests.  $P < 0.05$  was accepted as statistically significant.

## **RESULTS**

Respondent's answers are shown in Tables 2-3. 61.8% of family physicians and 64.0% of family practice nurses proposed at least 2 weeks bed rest after uncomplicated myocardial infarction. 51.6% of the nonsurgical specialists and 53.2% of the surgical specialists suggested at least 1 week of bed-rest, while 1/3 of them suggested the bed-rest to be limited to only 12 hours. Nonsurgical clinic nurses and surgical clinic nurses proposed 1 to 2 weeks of bed-rest.

After cardiac catheterization and liver biopsy, bed-rest duration of 24 hours was suggested by most of the specialist doctors, while almost all of the other healthcare providers suggested it should be 48 hours. Acute lower back pain bed-rest duration was suggested to be shorter by 40-70% of all groups; mostly by family physicians and family practice nurses. To prevent deep vein thrombosis after a total knee replacement, the vast majority of respondents suggested early mobilization. Most specialist doctors prominently agreed with early mobilization after a stroke, while other health personnel suggested the mobilization after a complete remission. More than half of the specialist doctors accepted the benefit of early mobilization in pulmonary tuberculosis, while family physicians and all nurses did not accept this topic.

The semi-recumbent position was accepted by nearly all the respondents as being useful. The ineffectiveness of the semi-recumbent position in unconscious patients was accepted by less than 50% of all participant groups, and the vast majority of specialists did not accept the view of an increasing rate of patients falling out of bed, while the other group in agreement was more than 50%. Nearly 20-30% of all the groups accepted the view of increasing the decubitus ulcers.

**Table 1.** The Demographic Data of Participants

Characteristics (n=556)	Family Physicians (n=55)	Nonsurgical specialists (n=62)	Surgical specialists (n=47)	Family practice nurses (n=75)	Nonsurgical clinic nurses (n=159)	Surgical clinic nurses (n=158)
Male/Female	35/20	35/27	42/5	26/48	16/143	16/142
Age (year)	30±4	34±7	36±8	28±5	30±6	32±7
Duration of Duty (year)	4±3	8±7	8±4	5±4	8±6	9±7

**Table 2.** Comparison of Correct Answers of First Group Questions

Characteristics n=556		Family Physician n=55 (%)	Nonsurgical specialists n=62 (%)	Surgical specialists n=47 (%)	Family practice nurses n=75 (%)	Nonsurgical clinic nurses n=159 (%)	Surgical clinic nurses n=158 (%)
Uncomplicated STMI	12 hours	4 (7.3)	18 (29.0)*	14 (29.8)*	7 (9.3) <sup>bd</sup>	28 (17.6) <sup>*acf</sup>	28 (17.7) <sup>+adf</sup>
	One week	17 (30.9)	32 (51.6)*	25 (53.2)*	20 (26.7) <sup>bd</sup>	77 (48.4) <sup>*acf</sup>	63 (39.9) <sup>+adf</sup>
	Two weeks	34 (61.8)	12 (19.4)*	8 (17.0)*	48 (64.0) <sup>bd</sup>	54 (34.0) <sup>*acf</sup>	67 (42.4) <sup>+adf</sup>
Cardiac catheterization and liver biopsy	4-6 hours	1 (1.8)	21 (33.9)*	10 (21.3)*	6 (8.0) <sup>bd</sup>	32 (20.2) <sup>*af</sup>	15 (9.5) <sup>+bcfx</sup>
	24 hours	16 (29.1)	26 (41.9)*	23 (48.9)*	12 (16.0) <sup>bd</sup>	53 (33.3) <sup>*af</sup>	63 (39.9) <sup>+bcfx</sup>
	48 hours	38 (69.1)	15 (24.2)*	14 (29.8)*	57 (76.0) <sup>bd</sup>	74 (46.5) <sup>*af</sup>	80 (50.6) <sup>+bcfx</sup>
Duration of bed rest Acute low back pain	2 day<	8 (14.5)	24 (38.7) <sup>+</sup>	10 (21.3)	19 (25.3) <sup>d</sup>	59 (37.1) <sup>*f</sup>	31 (19.6) <sup>+afs</sup>
	7 day<	9 (16.4)	14 (22.6) <sup>+</sup>	14 (29.8)	12 (16.0) <sup>d</sup>	34 (21.4) <sup>*f</sup>	48(30.4) <sup>+afs</sup>
	Short as possible	38 (69.1)	24 (38.7) <sup>+</sup>	23 (48.9)	44 (58.7) <sup>d</sup>	66 (41.5) <sup>*f</sup>	79 (50.0) <sup>+afs</sup>
Total knee replacement Early mobilization	24 hours	45 (81.8)	47 (75.8)	39 (83.0)	65 (86.7) <sup>a</sup>	117 (73.6) <sup>f</sup>	129 (81.6) <sup>e</sup>
	One week	7 (12.7)	14 (22.6)	7 (14.9)	6 (8.0) <sup>a</sup>	36 (22.6) <sup>f</sup>	26 (16.5) <sup>e</sup>
	Two weeks	3 (5.5)	1 (1.6)	1 (2.1)	4 (5.3) <sup>a</sup>	6 (3.8) <sup>f</sup>	3 (1.9) <sup>e</sup>
Stroke Early mobilization	48 hours	12 (21.8)	35 (56.5)*	29 (61.8)*	14 (18.7) <sup>bd</sup>	49 (30.8) <sup>bdf</sup>	40 (25.3) <sup>bdf</sup>
	One week	7 (12.7)	15 (24.2)*	9 (19.1)*	14 (18.7) <sup>bd</sup>	31 (19.5) <sup>bdf</sup>	28 (17.7) <sup>bdf</sup>
	Completely healed	36 (65.5)	12 (19.4)*	9 (19.1)*	47 (62.7) <sup>bd</sup>	79 (49.7) <sup>bdf</sup>	90 (57.0) <sup>bdf</sup>
TBC and hepatitis Early mobilization	Positive Effects	13 (23.6)	32 (51.6) <sup>+</sup>	29 (61.7)*	26 (34.7) <sup>ad</sup>	61 (38.4) <sup>+cf</sup>	52 (32.9) <sup>adf</sup>
	Negative effects	42 (76.4)	30 (48.4) <sup>+</sup>	18 (38.3)*	49 (65.3) <sup>ad</sup>	98 (61.6) <sup>+cf</sup>	106 (67.1) <sup>adf</sup>

**Abbreviation:** STMI, ST-elevation myocardial infarction; DVT, deep vein thrombosis; TBC, pulmonary tuberculosis  
 \* = p<0.001 According to family physician      d= According to surgical specialists p<0.001  
 += p<0.05 According to family physician      e= According to family practice nurses p<0.05  
 a= According to nonsurgical specialists p<0.05      f= According to family practice nurses p<0.001  
 b= According to nonsurgical specialists p<0.001      s= According to nonsurgical clinic nurses p<0.001  
 c= According to surgical specialists p<0.05      x= According to nonsurgical clinic nurses p<0.05

**Table 3.** Comparison of Correct Answers of Second Group Questions

Characteristics n=556		Family Physician n=55 (%)	Nonsurgical specialists n=62 (%)	Surgical specialists n=47 (%)	Family practice nurses n=75 (%)	Nonsurgical clinic nurses n=159 (%)	Surgical clinic nurses n=158 (%)
Prevention of aspiration and pneumonia	Correct	53 (96.4)	60 (96.8)	40 (85.1) <sup>*a</sup>	75 (100.0) <sup>d</sup>	155 (97.5) <sup>d</sup>	154 (97.5) <sup>c</sup>
	Wrong	2 (3.6)	2 (3.2)	7 (14.9) <sup>*a</sup>	0 (0.0) <sup>d</sup>	4 (2.5) <sup>d</sup>	4 (2.5) <sup>c</sup>
Has no benefit in unconscious patients	Correct	9 (16.4)	19 (30.6)	18 (38.3)*	29 (38.7) <sup>+</sup>	68 (42.8)*	58 (36.7) <sup>+</sup>
	Wrong	46 (83.6)	43 (69.4)	29 (61.7)*	46 (61.3) <sup>+</sup>	91 (57.2)*	100 (63.3) <sup>+</sup>
Falling out of bed	Correct	38(69.1)	24 (38.7)*	22 (46.8)*	55 (73.3) <sup>bd</sup>	109 (68.6) <sup>bdf</sup>	124 (78.5) <sup>adx</sup>
	Wrong	17 (30.9)	38 (61.3)*	25 (53.2)*	20 (26.7) <sup>bd</sup>	50 (31.4) <sup>bdf</sup>	34 (21.5) <sup>adx</sup>
Developing decubitus ulcer	Correct	13 (23.6)	21 (33.9)	17 (36.2)	19 (25.3) <sup>d</sup>	67 (42.1) <sup>+f</sup>	59 (37.3) <sup>f</sup>
	Wrong	42 (76.4)	41 (66.1)	30 (63.8)	56 (74.7) <sup>d</sup>	92 (57.9) <sup>+f</sup>	99 (62.7) <sup>f</sup>

\* = p<0.001 According to family physician      c= According to surgical specialists p<0.05  
 += p<0.05 According to family physician      d= According to surgical specialists p<0.001  
 a= According to nonsurgical specialists p<0.05      f= According to family practice nurses p<0.001  
 b= According to nonsurgical specialists p<0.001      x= According to nonsurgical clinic nurses p<0.05

## DISCUSSION

According to our study results healthcare providers were not kindly disposed to early mobilization and tended towards favoring long

duration of bed rest. However, when subclassification was made there was a significant difference of opinion among specialist doctors, nurses working at second and third healthcare

facilities, family physicians and family practice nurses working at first step healthcare institutions. We think the reason may be that medical doctors and nurses working in the first step healthcare institution follow-up outpatients, and thus, do not have any experience in following up such patients who need hospitalization. Another reason may be that medical doctors in Turkey while specializing have 4-5 more years of further training than family physicians, and this training which is at the third step healthcare institution enhances the experience and knowledge of these patients.

Although having nurses from similar training working at first, second and third step healthcare institutions, their opinions were different. Our results were supported that nurses working at the first step health institution, in which they do not follow-up such patients, may be also influenced by the views of doctors they work with in the same team. A previous study reported by Aydin and Cure has shown that healthcare staffs support a long duration of bed-rest as they carry out it as a form of treatment<sup>8</sup>. The author's emphasize that this study was conducted in a single center, and the number of participants was not large enough to generalize the results. In the current study the vast majority of healthcare providers support a bed-rest. Thus, it reveals similar results to the previous study. In comparison to the previous study, the number of participants and the diversity of institutions in our study are quite sufficient.

The reason that a long duration of bed-rest is supported by healthcare providers is that the vast majority of patients in Turkey believe in bed-rest as a treatment for illness, and influences healthcare providers in giving permission.

Especially after interventional procedures and in older patients the intervention of patient's relatives is very obvious. Almost all the study participants accepted the usefulness of the semi-recumbent position to prevent aspiration pneumonia. The uselessness of it in unconscious patients was accepted by a number of healthcare providers, which can not be underestimated. In this regard we conclude that there is lack of staff knowledge and experience. The study reported previously by Aydin and Cure has shown similar results<sup>8</sup>. The authors suggested these issues to be included in educational courses. Especially in an intensive care unit the patients who may benefit from this position must be identified and must be known by healthcare providers.

The elevation of the head of the bed may increase the risk of falling out of bed and

development of decubitus ulcers<sup>9</sup>. It is suitable to be applied to patients with indications. Even if increasing the risk of falling out of bed was accepted by nearly half of the participants, increasing the risk of development of a decubitus ulcer was not accepted by the majority. The view of increasing the risk of falling out of bed was accepted by most nurses, and the reason may be that nurses primarily follow up the treatment and take care of the patients so they have more experience in this regard.

After an uncomplicated myocardial infarction 12 hours period of rest usually is sufficient and it is recommended for hemodynamically stable patients in the first 24 hours to sit on the edge of bed or chair, and on the 2<sup>nd</sup>, and 3<sup>rd</sup> day to walk around in the room<sup>10,11</sup>. Most of our participants suggested at least one week of long term rest.

The majority of specialist doctors suggested one week of bed rest. However, short-term rest has been accepted by most specialists. Family physicians and family practice nurses suggested 2 weeks of rest. Nurses working in nonsurgical and surgical clinic proposed 1 or 2 weeks of rest. After cardiac catheterization and liver biopsy 4-6 hours of rest is recommended<sup>12,13</sup>. While specialist doctors suggested a maximum of 24 hours of rest, family physicians and all nurses in all centers suggested a rest should be 48 hours. It has been shown that after these procedures long-term bed rests were applied to the patients.

In the literature a return to usual physical activity after acute lower back pain is recommended as soon as possible, and increasing the duration of bed rest is said to be of no benefit; even in severe cases a short-term rest of less than 2 days is recommended<sup>14</sup>. Mainly family physicians and family practice nurses' supported early mobilization as possible. The majority of all the groups accepted the rest to be less than 2 days. The Health staff's knowledge and experience on this subject was better than other information. It was determined that in patients with pulmonary tuberculosis and pneumonia of a long period of bed rest was of no benefit<sup>15</sup>. In the study, with the exception of specialist doctors, most other medical staff believed that early mobilization was harmful<sup>16</sup>. They thought that the early mobilization before complete remission would harm the patients. This shows that the vast majority of the health staff has poor information, and thus, patients are unnecessarily immobilized.

In a study investigating the effects of early mobilization upon decreasing the deep vein thrombosis risk after total knee replacement, it was shown that patients mobilized after 24 hours

of a total knee replacement had a lower risk of deep vein thrombosis<sup>17</sup>. In our study, to decrease the risk of deep vein thrombosis related to a total knee replacement, the vast majority of health staff preferred to start mobilization within 24 hours of the operation. Health personnel commonly experience such patients, so contrary to poorly information on other arguments; the staffs were very knowledgeable and experienced in the issue of deep vein thrombosis.

According to the results of phase II of the AVERT study, it was determined that early mobilization of stroke patients decreases the complications of immobility and shortens the length of their hospital stay. Within 24 hours of the stroke, early mobilization was performed as sitting or standing at least twice a day. Phase III of this study is continuing<sup>18</sup>. In this regard a study of professional personnel opinions on strokes by Monika Skarin showed that there is a need for more comprehensive studies<sup>19</sup>. A questionnaire study of professional personnel opinions on strokes by Anna Scoholm showed that 40% of participants suggested starting mobilization within 24 hours of a stroke<sup>20</sup>. A review by Julie Bernhardt's Cochrane reported that mobilization after 24 hours could prevent minor complications; however, this could not prevent disability or death<sup>21</sup>. Although there is no complete consensus regarding mobilization time of stroke patients, there are ongoing studies. Interestingly, in this study the vast majority of specialist doctors working in second and third step health facilities suggested mobilizing patients within 48 hours; the other questionnaire participants did not defend early mobilization.

When analyzing the study, especially the first 6 questions in which early mobilization was examined, the specialist doctors preferred a shorter duration of bed rest compared with other health personnel. In contrast, nonsurgical and surgical clinic nurses were found to have more knowledge and experience of the benefits and advantages of the semi-recumbent position. It was concluded that due to an intensive paced business, health personnel were unable to follow the literature. It has been shown that education regarding the advantages of early mobilization and the harm of immobilization is needed in all institutions. In this regard university hospitals have great responsibilities to do so.

## LIMITATIONS OF THE STUDY

In this questionnaire the focus has been on the benefit of early mobilization and the harm of a prolonged duration of bed rest. In this study specialist doctors having wide range of specialties may have influenced the questionnaire's results. In our area the number of specialists in this subject is not sufficient for this research. Even though this subject interests all levels, new studies in specific branches may give better results. All health professionals, especially medical doctors, had been working intensively that some of the accessed healthcare providers refused to fill out the questionnaire for fear of disrupting their work schedules. Despite the interviewer trying for several times, some of the healthcare providers, especially surgical specialists, were not accessible.

Our questionnaire's questions may not fully examine information in the literature, but the absence of proximity and doubt in questions strengthen the results. The questions were asked through a face to face interview, so there was no data loss.

## CONCLUSION

This study has shown that healthcare providers do not follow up literature related to early mobilization and bed rest, and thus, are in need of intensive training programs covering these issues. Since it is known that immobilization increases the length of hospital stay and negatively affects all body systems, it is very mistake to use it as a treatment modality. According to guidelines, the benefit of early mobilization in hemodynamically stable patients is well known. Unfortunately, there is no guideline for many illnesses showing when patients have to be mobilized. In such patients the mobilization is based on the experience of the healthcare provider. At least half of the healthcare providers have a positive opinion regarding bed-rest, so morbidity, mortality and the negative effects on cost is inevitable. Such studies may direct the healthcare providers to focus on these issues. Throughout the training of healthcare providers, the benefit of early mobilization and the dangers of prolonged bed rest should be emphasized.

## CONFLICT OF INTEREST STATEMENT

None of declare.

## ACKNOWLEDGEMENTS

The authors would like to thank all the healthcare personnel who took part in this research.



## APPENDIX I

**The evaluation of doctors and nurses opinions regarding bed rest and the semi-recumbent position.**

**Please tick the appropriate box**

### A. First group's questions

**1-What is the duration of bed rest recommended after uncomplicated ST-elevation myocardial infarction?**

12 hours

It should be at least one week

It should be at least two weeks

**2-What is the duration of bed rest recommended after cardiac catheterization and liver biopsy?**

4-6 hours

24 hours

48 hours

**3-What is the duration of bed rest recommended for acute lower back pain?**

It should be at least 2 days

It should be at least 7 days

It should be short as possible

**4-When should the mobilization be initiated after a total knee replacement surgery to decrease the risk of the development of deep vein thrombosis?**

After 24 hours

At least after one week

At least after two week

**5-When is mobilization recommended to be initiated after stroke?**

Within 48 hours

At least after one week

After the patient has completely recovered

**6-During treatment of pulmonary tuberculosis and acute infectious hepatitis**

Early mobilization of the patient has more positive effects

Early mobilization of the patient has more negative effects

### B. Second group's questions.

**The semi-recumbent position in immobile patients**

Is useful for the prevention of aspiration and pneumonia

correct  wrong

Has no benefit in unconscious patients'

correct  wrong

May be dangerous as it increases chances of falling out of bed

correct  wrong

May be dangerous because of the development of a decubitus ulcer

correct  wrong

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