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**Examining older people using  
ABCDE-Protocol: A Simulation for  
the Nurses at Kuninkaanhaka in  
Pori**

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## ABSTRACT

Debesay Okbasamuel: Examining older people using the ABCDE-Protocol, A simulation for the nurses at Kuninkaanhaka in Pori

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The use of ABCDE in older people's clinical examination is extensively studied in this thesis. The ABCDE method, which comes from Airways, Breathing, Circulation, Disability, and Exposure, systematically identifies and controls critically ill older people in nursing home care. This thesis focuses on increasing nursing competence in assessing and treating vital function disturbances with the ABCDE approach. Furthermore, the objective was to increase older people's safety in nursing home care and decrease unessential visits to the emergency hospital. This thesis also aimed to support nurses in understanding why the dysfunction of essential vital functions should be treated, monitored, and identified using the ABCDE method.

The use of waterfall project support to complete this thesis step by step. The material for this thesis was collected from national and international research and articles such as from Google Scholar and Google Search. The theoretical background of this study consists of essential vital functions, ABCDE protocol, NEWS score, and simulation. The Theoretical framework was written to fit nursing home care. The ABCDE protocol allows older people systematic observation, immediate assessment, and the treatment of primary vital disorders. This thesis provides clear information on why this protocol is essential. Nurses in Kuninkaanhaka will reduce the consultation from emergency care.

In the future, it would be useful to have more research data on the ABCDE method available in English. Furthermore, upcoming researchers can study whether the ABCDE investigation has increased in nursing home care, and for further development, the effect of simulation on the ABCDE protocol could be studied.

Keywords: ABCDE-Protocol, older people examination, NEWS score, Vital Signs, Simulation for nurses

## ABBREVIATIONS

ABCDE: Airway, Breathing, Circulation, Disability, Exposure

WHO: World Health Organization

NEWS: National Early Warning Score

ECG: Electrocardiograph

GCS = Glasgow coma scale

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## 1 INTRODUCTION

In this thesis, older people are more than 65 years old. Several incidents are more likely to occur as people get older. In nursing home care, circumstances change rapidly. When this happens, the nursing worker must act appropriately in the current situation and in a way that best supports the older people's condition. According to the law, health and social services that support care and treatment must be administered so the service user believes it is valued, meaningful, and safe. The service recipient has the right to well-being, health promotion, and maintenance. This includes, among other things, sufficient competence of service home employees in terms of promoting and sustaining health and well-being (Finlex, 980/2012).

The ABCDE (Airways, Breathing, Circulation, Disability, and Exposure) procedure, a widely accepted protocol in healthcare, was introduced by the Austrian anesthesiologist Peter Safar in the late 1950s. His book, *ABC of Resuscitation*, is a seminal work that describes the first three steps of the modern ABCDE protocol (Thim et al., 2012). Early adoption of the ABCDE approach is beneficial for healthcare professionals, facilitating their learning and professional growth. The protocol is particularly useful for assessing and evaluating the essential vital functions of older individuals.

## 2 EXAMINING OLDER PEOPLE WITHOUT ABCDE PROTOCOL

Healthcare professionals, including doctors, nurses, and medical students, play a crucial role in conducting the ABCDE systematic examination. This examination helps to identify critically ill older people and find the leading cause that triggered their deteriorating condition. The examination involves a thorough investigation of the older people's health, including basic vital sign observation, which can be implemented without the aid of medical procedures by using our senses, such as palpation, inspection, and auscultation. The examination focuses on the airways, circulations, and consciousness, which determine essential human organ functions, and these organ functions are necessary to stay alive (Ahonen et al., 2016, p.185).

According to Tait (2016, p. 14), the optimal outcome in assessing an older people's body is achieved when the older people are systematically investigated using the ABCDE methodology and the examination results are compared to the clinical picture. The nurse's senses, sight, hearing, and touch are the most significant tools in evaluating older people's clinical picture for the first time. It is crucial for the nurse to be attentive and focused when assessing the clinical picture, as it can reveal important information about the older people's health.

## 3 BASIC VITAL FUNCTIONS

This chapter describes essential human vital functions. Basic vital functions include major medical procedures such as breathing, circulation, and consciousness. Measurements and tests of vital functions are also used to diagnose and monitor several less prevalent illnesses and assess the success of their treatment (HUS, 2023). By measuring vital signs, nurses can analyse and correct situations that arise in critical situations for older people, and the vital

signs will tell the outcome of the health condition of the older people. Nursing professionals must know the essential functions of assessing older people's state and deciding on their treatment using the ABCDE procedure.

### 3.1 Breathing

In healthy older people, a small quantity of lubricating fluid between the two leaves forms a thin film and coats the leaves. The lung's primary role is to reduce friction during breathing movements. The amount of fluid remains constant in a normal state because its generation and absorption are balanced. Smokers and people who work in dusty environments are more likely to acquire chronic lung illnesses (Terveyskylä, 2022).

Breathing and blood circulation contribute to the body's balance, and the primary goal of breathing is to ensure the body's oxygen supply in all scenarios while also removing carbon dioxide created by energy metabolism. Breathing is regulated by the respiratory center, located in the brain's medullary part. It is separated into the inhalation and exhalation centers regarding nerve cell activity, delivering nerve impulses to the respiratory muscles to either speed up or slow down breathing. Through humoral and neurological regulation, the respiratory center regulates breathing based on instructions received from receptors situated throughout the body. Humoral regulation includes chemical changes in blood and tissue fluid, with variations in blood carbon dioxide content having the most significant effect. When the blood carbon dioxide content rises, the respiratory center accelerates breathing to eliminate the carbon dioxide and keep the organism in equilibrium (Ryynänen, 2021).

### 3.2 Breathing failure time

Airways failure, a condition characterized by a lack of oxygen or carbon dioxide, is a complex disease that can lead to various health issues. Hypoxemia,

a key indicator of airway failure, is a serious concern when blood oxygen pressure (PaO<sub>2</sub>) is < 8 kPa or haemoglobin oxygen saturation (SpO<sub>2</sub>) is < 90%. This condition is further classified into three groups: low alveolar oxygen pressure, diffusion distribution, and increased venous congestion. Understanding these classifications is crucial for effective diagnosis and treatment, and it's a key part of being prepared to address airway failure.

The background of hypoxemia involves a key concept: increased venous mixing. This occurs when there is insufficient ventilation of the lung tissue and a simultaneous lack of blood circulation. As tissue perfusion decreases, the extraction of oxygen from the blood and its uptake by the tissues is compromised, leading to a reduction in the remaining oxygen in the venous blood. There are two ways possible to promote the airway: venous congestion making small and increasing SvO<sub>2</sub> (Reinikainen, 2022).

### 3.3 Circulation

After the breathing part, the nurse concentrates on the circulation of the body system. The circulatory system comprises vessels carrying blood away from and toward the heart. Blood vessels are divided into arteries, veins, and capillaries.

The heart, with its four valves, is a powerful muscle pump that ensures blood flows in the right direction and prevents it from flowing backward. The valve connecting the left atrium to the ventricle is called the mitral or bicuspid valve. The tricuspid valve is the one that connects the right atrium to the ventricle. The aortic valve sits between the left ventricle and the aorta, while the pulmonary valve is between the right ventricle and the trunk of the pulmonary artery. This dynamic system allows the heart to pump blood from the heart to the body or vice versa, where the exchange of chemicals between blood and cells occurs. Blood returns to the heart via the veins from the capillaries (Kettunen, 2016).

The heart has been split into two halves: right and left. Both sides have a vestibule and a chamber. The coronary circulation's function is to monitor the heart muscle and meet its metabolic needs under any circumstances. Healthy coronary arteries do it effectively because they absorb 4-5% of the blood volume pumped by the heart at rest, even though the heart only makes up roughly 0.5% of total body weight. Furthermore, under intense efforts, a healthy adult's coronary flow might increase 5-6 times higher than at rest. The most common cause of inadequate coronary flow is atherosclerosis-related damage and narrowing of the coronary arteries. Despite improved treatments, coronary artery disease remains the leading cause of death among working-age individuals, affecting around one in every three Finnish men and women (Leinonen, 1998).

The vast blood flow begins in the left half of the heart and travels through the aorta and small arteries to nearly all of the body's capillaries. A minor circulation begins in the right atrium, from which blood travels to the pulmonary capillaries via the pulmonary artery trunk and pulmonary arteries. The pulmonary veins carry blood from the pulmonary capillaries to the heart's left atrium (Kustannus Oy Duodecim, 2017).

### 3.4 Circulation deficiency

Blood circulation deficiency, a failure of the body's cardiovascular mechanisms, results in insufficient blood circulation, oxygen, and nutrient supply for the cells' metabolic needs. The primary clinical etiological and hemodynamic problem divides circulatory failure into hypovolemic, cardiogenic, distributive (septic, anaphylactic), and obstructive shock forms (Varpula et al., 2023). Identifying the hemodynamic profile of circulatory deficiency is crucial for proper clinical treatment. The high stakes involved are evident in the potential impact of even a small delay in diagnosis and treatment on the disease's progression (Varpula, 2023).

### 3.5 Consciousness

Consciousness describes a person's ability to be aware of older people and surroundings in connection to history, present, and future. The Glasgow Coma Scale is used to measure the level of consciousness—the absence of this awareness refers to human unconsciousness. Following a head injury, it is critical to monitor the level of consciousness to detect any changes in the level of consciousness as soon as possible. Drowsiness is the initial symptom of lowering one's state of consciousness. When the degree of consciousness is disturbed, the older people's attention decreases, making interaction more complex, and he does not respond to stimuli as expected. Unconsciousness happens when an older people can no longer be awakened (Terveyskylä, 2023).

Loss of consciousness in older people is a common issue, often due to their prolonged exposure to diseases. The GCS scale plays a vital role in assessing this, measuring eye-opening, voice response, and movement reaction. It assigns scores based on your reactions to speech, pain, and other stimuli.

### 3.6 Unconsciousness situation

Early physiological stability and diagnosis are vital to achieving optimal results. The sensitive situation is also difficult to manage, and highly experienced nurses and paramedics are required to release the critical loss of consciousness time. After the ABC assessment, the level of consciousness must be estimated and documented using the GCS tool (Cooksley et al., 2018).

## 4 ABCDE PROTOCOL

The ABC mnemonic was created in the 1950s. ABCDE techniques are used to protect the airway and give rescue breaths, giving rise to the first two letters

of the mnemonic, A and B. The ABCDE technique was further developed and spread in 1976 (Thim et al., 2012).

This section explains the ABCDE protocol, a systematic method for examining older people's health issues. The protocol, which stands for Airway, Breathing, Circulation, Disability, and Exposure, was developed to guide healthcare personnel in the clinical examination of older individuals. It emphasizes the importance of assessing the first essential vital function, which is crucial for identifying and addressing life-threatening conditions.

The Airway, Breathing, Circulation, Disability, and Exposure (ABCDE) strategy is not just relevant for quick assessment and treatment in all clinical emergencies. It's a life-saving tool. Emergency medicine experts widely support the strategy and anticipate enhancing outcomes by assisting healthcare personnel in focusing on the most life-threatening clinical conditions. The high-quality ABCDE abilities among all team members in an acute environment can save precious time and improve team performance. Thus, dissemination of knowledge and skills connected to the ABCDE approach is required (Bo et al., 2012).

However, there are differences in interpreting and implementing the ABCDE technique between fields. The organization's perspective influences the implementation of the ABCDE method, as well as the workforce and labour quality, which play a crucial role in the process. Task burden, service provider attitudes, patient characteristics, and work environment also contribute. It might be effectively improved by training the employees, having adequate staff, and modelling the implementation of the ABCDE method protocol (Boehm et al., 2016).

Letter	Life-threatening condition
A – Airway	Airway blockage, cervical spine injury
B – Breathing	Tension pneumothorax, pulmonary oedema, bronchospasm
C – Circulation	Shock (hypovolaemic, obstructive, distributive, cardiogenic)
D – Disability	Seizure, hypoglycaemia, meningitis, intracranial haemorrhage or infarction, intoxication
E – Exposure	Hypothermia or hyperthermia, critical skin conditions such as fasciitis or urticaria

Table 1. The basic approach of ABCDE protocol (Olgers, T.J. et al., 2017).

#### 4.1 Pre-estimation/primary survey

The primary survey is usually done in the first stage of the older people assessment. In the primary survey, the nurse would try to find if it is an emergency for older people or nonemergency and whether the consciousness of older people is conscious. In this stage of basic vital function, the nurse will use just the ABC method, which stands for Airway, Breathing, and Circulation. This method is a systematic approach to quickly assess and treat life-threatening conditions. Based on the 'Elvytyksen Käypä hoito recommendation (2021), consciousness can lead to, e.g., cardiac arrest. During the dialogue and awakening, a rough estimate of the level of consciousness should be made using, for example, the AVPU formula. Are the older people awake (Alert)? Is his eyes open, and is he watching the situation? Do older people react to sound (Verbal) and can be awakened by speech, or do they react to pain/can be awakened by pain (Pain)? Older people do not respond or cannot be woken (unresponsive) (Alanen et al., 2016, 20).

A: driven from the word AIRWAY. In A section, the nurse will examine the older people's consciousness and determine if the pharyngeal muscle tone is sufficient to keep the airways open. At the same time, are hearing the older people's airways sufficiently enough, and is there anything in the airways that can

impact the same section or the entire older people's airway work? The tongue, secretion, and other foreign objects make breathing difficult. Older people's consciousness airway examination always begins with opening the airways (Alanen et al., 2017, pp. 20-24).

B: driven from the word Breathing. In the B section, sufficient oxygenation and Breathing are assessed by observing and listening. By inspection, the bluish and greyish skin colour in older people may indicate that the body's oxygen level is low (Alanen et al., 2017, pp. 22-24). Good places to assess skin colour are the lips, oral mucosa, nose tip, ear lobes, and nail beds (Rautava-Nurmi et al., 2020, pp. 320-321).

C: drive from the word Circulation. In the C section, in the initial assessment, palpation of the arterial pulses is enough to assess the blood circulation. For conscious older people, palpation of the carpal artery is sufficient to assess the risk of blood circulation. An unresponsive older people are palpated by the carotid pulse, a challenging but significant task for nurse and doctor professionals. The state of blood circulation is assessed by palpating the wrist pulse (radial). At the same time, changes in skin temperature are evaluated, e.g., sweating is a sign of symposia, which may show shock, poisoning, convulsions, or abnormal breathing. Feeling the wrist pulse tells you the heart rate, rhythm, and intensity of the heartbeat (Alanen et al., 2017, 20-24.)

#### 4.2 Comprehensive estimation/ secondary survey

A primary survey should be used to examine the older people in total under 5 minutes, after that transfer to the central evaluation part (Metsävainio & Junttila, 2016). The detailed evaluation is still a methodical activity that adheres to the ABCDE technique and reduces the possibility of forgetting something from the investigations (Alanen et al., 2016, p. 24).

The secondary survey begins after the primary survey has been completed, immediate life hazards have been identified and treated, and we have ensured the stability of the older individuals. This reassurance allows us to proceed with the examination of the face and scalp, paying close attention to the eyes, ears, nose, mouth, teeth, and jaw. The symptoms observed in the initial assessment time must not influence the secondary assessment, so the assessments are targeted based on the symptoms of the initial assessment (Alanen, 2016, p. 24). Examine the front of the neck for tracheal variation, wounds/bruising to the neck, subcutaneous emphysema, laryngeal tenderness, distension of the neck veins, carotid pulsation, and the existence of a hematoma, and listen for a bruit (The Royal Children's Hospital Melbourne, 2023).

When older people are critically ill, the ABCDE approach systematically helps tackle their health problems, and family involvement is crucial. ABCDE aims to keep older people alive and achieve the first steps to improve and get them out of their worst situations. In secondary evaluation, essential vital functions include blood pressure, pulse, rhythm, respiratory rate, oxygen saturation, consciousness level (GCS), pain measurement (VAS), blood sugar, and temperature, and basic measurements belong to everyone when dealing with the ABCDE approach frame time.

## 5 AIRWAYS

Untreated airway blockage causes hypoxia and increases the risk of brain, kidney, and heart damage, cardiac arrest, and death (Resuscitation Council UK, 2019). And this can lead, e.g., to consciousness weakness. If older people can speak, then their airways will be able to stay open during critical situations. If the older people's consciousness level are weak, breathing are snoring. Tongue compresses to block the airways; in this situation, the nurse's duty is to try to open the airways by changing, e.g., side position and one best way to ensure that the tongue does not go or flow to the pharynx is to use the pharyngeal tube (Alanen et al., 2016, p. 25).

## 6 BREATHING

### 6.1 Respiratory rate

Respiratory rate, one of the most important vital signs, plays a significant role in diagnosing and monitoring various medical conditions. It is vulnerable to severe heart attacks, respiratory infections, and clinical worsening, as well as stresses such as mental strain, emotional strain, extreme temperatures, physical exertion, and exhaustion from exercise (Nicolò et al., 2020). Understanding these factors is crucial, as they could cause an increased or decreased breathing rate, indicating potential issues. For example, pain, thirst, or medication's effects could cause an increased breathing rate, while reduced consciousness for various reasons is typically the cause of slowed breathing frequency (Alanen et al., 2016, p. 26).

#### Auscultation to breathe sounds

Auscultation is an essential paramedic examination that only improves by listening to different breathing sounds. Listening is possible in various situations, but it is most straightforward when older people sit (Kuisma et al., 2018). Before listening, ensure that the airway is open, and that spontaneous breathing is adequate. Listening to breathing sounds can only be reliable if the environment is quiet enough and you have peace of mind. The auscultation of the respiratory system is one of the earliest methods physicians use to diagnose lung disorders. It is affordable, harmless, secure, and simple to use. Warm up the stethoscope by pressing the chest piece between your palms before putting it on your nude body. Auscultation cannot be performed while wearing garments. Request that the patient take deep breaths via an open mouth. Begin auscultation anteriorly at the apices of the stethoscope and continue downward until no breath sound is perceived. Lung auscultation is a crucial component of the respiratory assessment and can aid in diagnosing various

respiratory illnesses. Airflow throughout the trachea-bronchial tree is measured by auscultation. To get an accurate diagnosis, it is critical to separate typical breathing sounds from aberrant ones, such as crackles, wheezes, and pleural rub (Sarkar et al., 2015).

## 6.2 Oxygen saturation

The oxygen saturation, or SpO<sub>2</sub> value, represents the percentage of oxygen molecules linked to haemoglobin in the blood. The pulse oximeter detects the oxygen saturation of the peripheral blood, and its accuracy can be influenced by factors such as older people's activity, cold extremities, or nail polish (Kuisma et al., 2018, p.125). The oxygen saturation meter sensor is commonly mounted to a finger or toe so that the opposite sides of the sensor point to each other. In some circumstances, the sensor can be attached to the earlobe or nose to the partition wall, in which case a new sensor head is required. The sensor should not be connected to a disabled people or an area of the body that is deficient in oxygen (Kuisma et al., 2018, pp. 128-129).

95 - 100%	• Normal Blood Oxygen Levels
91 - 95%	• 'Concerning' Blood Oxygen Levels
≥ 90%	• Low Blood Oxygen Levels
80 - 85%	• When Low Oxygen Saturation Affects Your Brain
67%	• Cyanosis

Table 2. Normal range of oxygen level for old people (Telecare Choice, 2023).

## 6.3 Circulation

In addition to low blood pressure, the absence of a pulse can be caused by vein constriction, which reduces blood flow in the vein (Kuisma et al., 2018, p. 133). Older people's average pulse rate is sixty and one hundred pulses per

minute. The pulse rate is calculated by palpating the artery for 15 seconds and multiplying the value by four. If you see an inconsistency in your pulse, increase the measurement time to one minute (Kupari & Nieminen, 2016, p. 201). The difference between systolic and diastolic pressures causes the pulse to be felt. A stringy pulse occurs when the strength of the pulse wave is abnormal. The pulse pressure in a wire-like pulse is low, and the systolic pressure is lowered (Aalto, 2009, p. 106).

#### 6.4 ECG monitor and blood pressure measurement

A 12-channel ECG (Electrocardiogram) recording is required to detect myocardial ischemia and for a more complete ECG analysis (Vahtera & Juntila, 2016, p. 23). A resting ECG is a commonly utilized test performed at rest. Adhesive electrodes are affixed to the skin's surface on the hands, feet, and chest. These electrodes record an ECG curve, which can be affected by arrhythmias and other cardiac conditions. It is an entirely painless and safe examination that takes around five minutes. The ECG measures the electrical impulses that control cardiac contraction. There is no need to start preparing for the examination ahead of time. ECG is a versatile exam that is an indispensable approach for diagnosing cardiac disorders and is simple to perform. ECG can investigate scars from old myocardial infarctions, bundle branch blocks, and susceptibility to arrhythmias, such as extra heartbeats, atrial fibrillation, and acute myocardial infarction. Resting ECG, Long-term ECG recording (Holter examination), and Symptomatic ECG are some of the several ECG investigations (Terveyskylä, 2023).

Blood pressure measurement is also part of the nurse's assessment of older people's blood circulation. The typical systolic blood pressure of an adult is 120-130 mmHg, while the diastolic blood pressure is 80-85 mmHg. Blood pressure is considered low if the systolic pressure is less than 100mmHg and the diastolic pressure is less than 50mmHg. Significantly high blood pressure is systolic pressure greater than 180 mmHg and diastolic pressure greater than

110 mmHg (Liukas et al., 2013). Blood pressure falls when older people's peripheral circulation or the blood volume circulated by the heart lowers (Varpula, 2016, p.119). Hypotension only manifests in a more advanced state of shock because the body's natural compensatory mechanisms keep normal blood pressure for a considerable time (Varpula, 2016, p.122).

## 7 DISABILITY

The AVPU (Alert, Voice, Pain, Unresponsive) method can be used to quickly assess an older people's degree of awareness, grading them as alert (A), voice responsive (V), pain responsive (P), or unresponsive. On the other hand, the Glasgow Coma Score may be applied. Limb motion should be examined for symptoms of lateralization. The best and quickest treatment for older people with a central cerebral disease is to stabilize the airway, breathing, and circulation. When older people are pain-responsive or unresponsive, the airway's integrity must be secured by placing the older people in the lying down position and calling staff certified to secure the airway, which may involve intubation in some situations. It's also important to stress the need to test pupillary visual responses concurrently with blood glucose levels. This can help identify the cause of decreased consciousness and guide appropriate treatment. A decreased level of consciousness due to low blood glucose can be corrected quickly with oral or infused glucose (Thim et al., 2012).

The criterion of unconsciousness is that an older people, breathes but cannot be woken up by talking or shaking. The level of consciousness may also be reduced, in which case the older people are awake but unable to react normally to environmental stimuli. For example, a reduced level of consciousness is manifested by confusion or involuntary repetition of movements without a goal. It can appear as a lack of orientation to place and time, and the older people need to learn what is happening or cannot answer the questions. Especially in

older people, a change in the level of consciousness can be the first sign of an acute change in health. The most common causes of unconsciousness are circulatory disorders, bleeding inside the skull, convulsions, blood sugar imbalance, intoxicants and drugs, profuse bleeding, or an inflammatory state of the body. The unconscious older people should be placed in the side position if there are no devices to keep the airway open be available. The relaxation of the pharyngeal muscles of an unconscious older people causes the tongue to sink into the pharynx quickly. Lifting the chin, the tongue stuck in the pharynx can be pulled into the airways from the front (Castren et al., 2017).

### 7.1 Glasgow Coma Scale (GCS)

The Glasgow Coma Scale (GCS) determines decreased awareness in all acute clinical and trauma patients. The scale evaluates patients based on three dimensions of responsiveness: Eye-opening, motor, and vocal responses. The Glasgow coma scale is divided into three parameters: best eye response (E), best verbal response (V), and best motor response (M). The level of response in the components of the Glasgow Coma scale is 'scored' from 1, for no response, up to the average value of 4 (Eye-opening response), 5 (verbal response), and 6 (Motor response). The total Coma Score thus has a value between 3 and 15, 3 being the worst and 15 being the highest (Jain & Iverson, 2023).

Function	Reaction	Score
Eye-opening	spontaneously	4
	For speech	3
	For pain	2
	No response	1
Speech response	Oriented	5
	Confused	4
	Inappropriate words	3
	Incomprehensible sounds	2
Motor response	No verbal response	1
	Obey commands	6
	Localize pain	5
	Withdraws from pain	4
	Flexion response to	3

	pain	
	Extension response to pain	2
	No motor response to pain	1
Total		3-15 scores

Table 3. (Käypähoito recommendation, 2023).

## 7.2 Blood sugar measurement

Monitoring blood glucose levels can assist in discovering trends in the variation of blood glucose (sugar) levels caused by diet, exercise, medications, and illnesses related to blood glucose changes, such as diabetes mellitus. Monitoring blood sugar levels can help diagnose and manage older people with a metabolic disorder or diabetes. Daily monitoring of blood sugar may not indicate for all older people with type 2 diabetes who are only taking oral diabetes medications or following a diet. Meanwhile, blood sugar monitoring may be necessary during the adjustment of oral medications known to cause hypoglycaemia, such as sulfonylureas (Mathew et al., 2023). The awaiting value for average fasting blood sugar concentration is 70mg/dl (3.9 mmol/L and 100 mg/dL (5,6 mmol/L). During fasting, blood sugar is expected to be between 100 to 125 mg/dL (5.6 to 6.9 mmol/L). Modifications in lifestyle and monitoring of glycemia are suggested. In case fasting blood sugar is 126 mg/dL (7mmol/L) or higher on two separate tests, older people should be diagnosed with diabetes diseases. Separately, with low fasting blood sugar concentration (hypoglycaemia) - below 70mg/dL (3,9mml/L), older people will experience dizziness, sweating, palpitations, and blurred vision. High blood sugar concentration (hyperglycaemia) shows that older people are at high risk of diabetes (WHO, 2024).

## 7.3 Pupils

The nurse's assessment of the movement and strength of the limbs in both the hands and feet is a critical aspect of patient care. The movement reaction, which refers to the activity of the brain's opposing side, is a key part of this assessment. The nurse's evaluation of movement response focuses on

strength, mobility, fluidity, clumsiness, compression force, and the limb's strength against gravity. When determining the level of consciousness, the nurse's evaluation of the size of the pupils and reactions to light is crucial. As intracranial pressure rises, the third cranial nerve compresses on the base of the skull, causing the pupil to enlarge and not contract, even in bright light. By measuring the light reaction of the pupils, the nurse can acquire a general estimate of intracranial pressure, thereby contributing significantly to patient care (Terveyskylä, 2018).

## 8 EXPOSURE

Every older people should be thoroughly examined, and older people's skin needs to evaluate the state of the skin and mucous membranes (nail beds, between the toes, petechiae, teeth, gums, lymph nodes) and to look for potential hidden wounds and traumas. Possible injuries as a result or cause of a collapse of strength are identified systematically by pressing and evaluating, for example, the RiVALAiSeR order (thorax-abdomen-pelvis, brain and spinal cord-spine-extremities). Measure the older people's pain using VAS rating scales. Older people's underlying medical conditions and allergies should also be considered (Kustannus Oy Duodecim, 2024).

When evaluating extremely sick older people, the nurse should do a thorough physical examination. When maintaining the older people's dignity, a thorough physical examination enables the nurse to look for any extra elements that may have been overlooked during previous rounds of the ABCDE evaluation. Likewise, the source of any abnormalities discovered during previous phases of the ABCDE examination, such as haemorrhaging trauma and allergic responses, including a rash or anaphylactic reactions to medications or toxins, may be revealed. The body's temperature can be assessed by touching the skin or using a thermometer; however, older people must be respected when disclosing their privacy. Older people can communicate suffering issues to the

nurse through words and gestures. Assessing pain in an emergency scenario might be difficult. The assessment of pain is based on the older people's account and the findings of indirect physical values, such as heart rate, temperature limits, and blood pressure readings, which can tell potential pain (Thim et al., 2012, p,120).

## 9 PURPOSES AND OBJECTIVES

After reading this thesis, nurses at Attendo Kuninkanhaka will have better-equipped knowledge to understand the ABCDE approach in emergencies, and nurses will analyze the situation using the ABCDE procedure. ABCDE procedure is not well known in senior home care due to a lack of knowledge of it; nonetheless, the primary goal of this thesis is to improve awareness of ABCDE protocol in nursing home environments. Until now, older people have been referred to hospitals when their health conditions change. However, the main goal of this thesis is to provide a thorough understanding of the holistic care of older people using the ABCDE protocol, and nurses will be more aware of the vital results as well as identify the critical situation more quickly. The nurse can observe unexpected results of basic vital signs to find a solution to older people's health condition changes using the ABCDE approach after taking vital signs.

## 10 BENEFITS OF FOLLOWING THE ABCDE METHOD

The evidence supporting the systematic ABCDE approach in critically ill or injured older people is expert consensus. The approach is widely accepted and used by emergency technicians, critical care specialists, and traumatologists. In analogy, algorithms for resuscitation are applied to improve the speed and quality of treatment. When analysing an older people's condition, use the ABCDE technique to prioritize essential functions. The technique is designed so treatments are carried out in descending order of urgency, with the most critical vital functions secured first. The condition of older people is continuously assessed using the same formula for all older people in nursing home care. The older people's state must be analysed methodically, and remedial actions must consistently be implemented as soon as they are identified; only then can we go on to the next component of the older people's well-being to be addressed (Thim et al., 2012).

The study involved two simulations. The first group conducted an older people assessment without the ABCDE method card but with the standard equipment of the first aid department. The second research group, however, used the ABCDE method card as an aid but without predetermined first-aid equipment. This comparison between the two groups provides valuable insights into the impact of using the ABCDE method card in patient assessment (Peran et al., 2020).

A pilot study showed that it took 5 minutes to solve both simulations. The research group that had the ABCDE method card in use carried out more stages of assessing the older people's need for treatment than the research group that operated without the method card. The group that used the method card also completed the steps in the correct order. The study's findings, which showed that the use of a concrete method card did not shorten or lengthen the median time of patient assessment, provide valuable insights into the research outcomes, instilling confidence in the practicality of the card's application (Peran et al., 2020).






ABCDE chart			
	EXAMINATION	INTERVENTION	GOAL
<b>A</b> 	<ul style="list-style-type: none"> <li>• airway noises</li> <li>• position of head</li> <li>• foreign body</li> <li>• fluid, secretions</li> <li>• oedema</li> </ul>	<ul style="list-style-type: none"> <li>• open</li> <li>• suction</li> <li>• secure</li> <li>• O<sub>2</sub></li> </ul>	<b>Patent airway</b>
<b>B</b> 	<ul style="list-style-type: none"> <li>• look - listen - feel approach</li> <li>• respiratory rate and effort</li> <li>• breath and added sounds</li> <li>• subcutaneous emphysema</li> <li>• symmetry of chest movement</li> <li>• tracheal deviation</li> <li>• jugular vein distention</li> <li>• cyanosis</li> </ul> <p>SpO<sub>2</sub> - ETCO<sub>2</sub> - USG - X-ray - CT</p>	<ul style="list-style-type: none"> <li>• O<sub>2</sub> according to SpO<sub>2</sub></li> <li>• pneumothorax therapy</li> <li>• inhalation therapy</li> <li>• ventilation</li> </ul>	<b>Sufficient oxygenation and ventilation</b>
<b>C</b> 	<ul style="list-style-type: none"> <li>• heart rate</li> <li>• blood pressure</li> <li>• capillary refill time</li> <li>• bleeding</li> <li>• skin colour</li> <li>• blood samples</li> <li>• diuresis</li> </ul> <p>ECG - USG - CT - X-ray</p>	<ul style="list-style-type: none"> <li>• I.V. / I.O. access</li> <li>• control of bleeding</li> <li>• massive haemorrhage protocol</li> <li>• fluids</li> <li>• drugs</li> <li>• transfusion</li> </ul>	<b>Stabilization of circulation</b>
<b>D</b> 	<ul style="list-style-type: none"> <li>• AVPU / GCS</li> <li>• reactivity and symmetry of pupils</li> <li>• blood glucose level</li> <li>• basic neurological examination</li> <li>• posture</li> <li>• toxicological examination</li> </ul>	<ul style="list-style-type: none"> <li>• glucose</li> <li>• antidotes</li> </ul>	<b>Evaluation of neurological state</b>
<b>E</b> 	<ul style="list-style-type: none"> <li>• head to toe examination</li> <li>• medical history</li> <li>• temperature</li> <li>• injuries</li> <li>• oedemas</li> <li>• scars</li> <li>• signs of drug abuse</li> <li>• skin changes</li> <li>• signs of infection/sepsis</li> </ul>	<ul style="list-style-type: none"> <li>• identified cause therapy</li> <li>• thermomanagement</li> <li>• trauma treatment</li> <li>• insertion of NGT, IUC</li> </ul>	<b>Revealing other symptoms and thermomanagement</b>

Table 4. ABCDE tool (Perna et al., 2020).

## 11 NEWS SCORE

NEWS (National Early Warning Score) is a scoring system developed by the Royal College of Physicians in England, which is used by medical staff to help assess older people's condition. With the help of the scoring system, it is possible to recognize the deterioration of older people's clinical condition more quickly and thus react to it more quickly (National Health Service England, 2017). The NEWS is based on a basic cumulative scoring system in which a rating is assigned to physiological parameters routinely recorded in ordinary practice when older people arrive at or are observed in the hospital. The scoring system is based on six simple physiological criteria: respiration rate, oxygen saturation, systolic blood pressure, pulse rate, level of consciousness or new confusion, and temperature. Each parameter is assigned a score as it is evaluated, with the value reflecting how far the parameter deviates from the normal range. The score is subsequently combined and increased by two points for older people needing supplementary oxygen to maintain their required oxygen saturation (Royal College of Physicians, 2017).

## 12 SIMULATION FOR NURSES

The waterfall project method supports the smooth flow from one stage to another. This simulation is meant to educate nurses on using the ABCDE protocol when examining older people. ABCDE protocol is not well-known in nursing home care, so this thesis raises awareness of the usefulness of using the ABCDE procedure. Nurses' competence in ABCDE protocol will help to improve older people's safety, reduce disturbances to vital functions of older people, and decrease emergency requests. According to the survey, nurses in Kuninkanhaka still need more education to grasp deeply since the ABCDE protocol is only used sometimes. ABCDE protocol is an essential measurement that all healthcare professionals need to know before they begin their

work. The head manager must take a huge responsibility to ensure the worker is competent in the ABCDE investigation.

According to survey nursing responses, Attendo Kuninkanhaka has been effectively using the ABCDE technique to assess older people's vital functions. The protocol is consistently followed, especially when investigating older people in the morning. The feedback confirms the importance of the ABCDE technique in Kuninkanhaka for treating older people's diseases. This success underscores the need for more education and training for registered and practice nurses in the ABCDE approach. By investing in their professional development, we are supporting them in their crucial role of evaluating and treating older people's lives during a critical crisis.

## 13 DISCUSSION

This thesis must educate nurses in Kuninkanhaka nursing home care. Discussion includes ethical issues and reliability, the thesis process, nursing professional growth and development, and pursuing and developing the thesis work expectations.

## 14 ETHICAL AND RELIABILITIES

In this thesis, the original author's work has been respected, and the results of the thesis have not been plagiarized or distorted. The writer respected the original researcher's work by using the reference marking guidelines provided by Satakunta University of Applied Sciences (SAMK), and this respected the original researcher's work.

## 15 THESIS PROCESS AND SIMULATION WORKLOAD

The thesis process includes many various stages. The thesis process is divided into three stages: planning, implementation, and finishing thesis work. Thesis planning includes joining a thesis class, choosing a topic, and thinking about where to find information. The implementation stage starts already during the preparation of the thesis work and plan and progresses to working on the thesis itself. In addition to the writer's interests, the topic of the thesis was influenced by the client's need to unify and improve the identification of disorders of vital organs at Attendo Kuninkanhaka. By completing the thesis, the writer will learn how to recognize essential vital function complications and worsening in older people's condition and how to use the ABCDE method as part of my nursing job in the future. The data search for the thesis began straight after the topic was chosen. At the beginning of the process, the writer conducted a comprehensive review of the 'fundamental works of the field, which are seminal research papers and textbooks related to the topic, from which the writer began to develop the theory section.

## 16 PURSUING AND DEVELOPING THE THESIS WORK EXPECTATION

Examining older people using the ABCDE protocol is a rare practice, and healthcare professionals need to understand how to systematically examine older people. However, the ABCDE protocol requires further research to fully educate nursing professionals. A potential research topic could be the practical application of the ABCDE principle in real-life situations and its potential benefits in nursing home care units. Importantly, organizing practical training for nursing staff could provide them with a more comprehensive understanding of using the ABCDE principle for critically ill older people. Researching the advantages and disadvantages of the ABCDE protocol in nursing home care

could be a valuable contribution to the nursing community, potentially leading to significant improvements in care.

## 17 CONCLUSION

Based on the research results, it is advised that the ABCDE approach be incorporated into nursing school and that nurses undergo extensive training in its use. The ABCDE approach is suggested as a routine screening procedure for all in Attendo nursing home care in Finland and other Scandinavian countries. This thesis, focusing on educating and empowering nurses, aims to equip them with the necessary skills to investigate older people in Attendo Kuninkanhaka nursing home care through simulation and a deep theoretical background of ABCDE protocol. It strives to raise awareness of the ABCDE protocol in older people's home care, with the understanding that nurses play a crucial role in improving the quality of life for older people in nursing care and reducing the need for emergency interventions. The simulation will also help nurses understand more about the examination of ABCDE protocol in Attendo Kuninkanhaka. After reading the whole thesis, nurses in Attendo Kuninkanhaka will be confident in their ability to use the ABCDE methodology, thereby reducing the need for emergency interventions and feeling empowered in their role.

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## APPENDIX 1 (LITERATURE RETRIEVAL)

Database	Keywords	Results	Chosen	
Google Scholar	Initial assessment and treatment with the Airway, Breathing, Circulation, Disability, Exposure (ABCDE) approach	450	4	
Theseus	Ensihoitopotilaan tutkiminen ja arviointi,	34	1	
Google Scholar	primary and secondary survey	38	2	
Google search	National Early Warning Score (NEWS).	23	1	
Google search	Mean fasting blood glucose, https	15	1	
Theseus	ABCDE protocol	23	7	

## APPENDIX 2 (PERSONAL TIMETABLE)

- 21.08.2023 Thesis course started
- 21.11.2023 Research thesis seminar
- 22.11.2023 Project thesis seminar
- 28.11.2023 Literature review seminar
- Plan and proposal preparation
- 15.01.2024 plan accepted
- Survey and call the manager to ask for more information regarding ABCDE
- Submitted whole thesis for approval