2nd Period

Clubfoot

My name is [redacted] I am a first year medical student specializing in orthopedic medicine. I am here to give information about clubfoot also known as talipes. Which is a deformity in which one or both feet are twisted into an abnormal position at birth. The occurrence of club foot varies between countries and populations, and may be related to endogenous and exogenous factors. Endogenous factors are ones that have proceeded from within and is derived from internally, exogenous factors are ones originated from outside they are derived externally. Clinical Research Unit, Copenhagen University Hospital Hvidovre, Copenhagen, Denmark analyzed the occurrence of CF in a whole country over a long period of time (16 years). Patients born in Denmark with a foot deformity 1978-93 were identified from the National Patient Register and the Register of inborn Malformations. The records for each patient were studied in the hospital departments to establish the diagnoses and to obtain additional information. Demographic data were obtained from the Danish National Demographical Institute and from the Danish Population Register. The incidence of isolated CF was 1.2/1,000 live births. It increased significantly during the study period, and the incidence of CF and the standardized morbidity ratio for CF were significantly positively correlated to population densities in the counties and the districts. There was no significant increase in the relative proportion of children with CF born to non-Scandinavian parents during the period. The increasing incidence of isolated CF with higher population density indicates that there may be exogenous factors that are pathogenic. They analyzed the occurrence of club foot in a whole country over a long period of time (16 years). The foot (especially the heel) is usually smaller than normal, the foot may point downward, the front of the foot may be rotated toward the other foot, and lastly the foot may turn in and in extreme cases the bottom of the foot can point up. There are four variations of clubfoot: talipes varus, talipes valgus, talipes equinus, and talipes calcaneus. The regular occurrence of inborn foot deformities has been recognized since ancient times. They appear as isolated foot deformities or as part of syndromes (it is considered isolated because

isolated clubfoot is the most common form of the deformity and occurs in children who have no other medical problems), e.g. multiple arthrogryposis (describes congenital joint contractures in two or more areas of the body it literally means curving of the joints), chromosomal abnormalities (any change in the normal structure or number of chromosomes; often results in physical or mental abnormalities), aplasia of fibula (a very rare syndrome characterized mainly by various bone abnormalities involving the arms and feet), spina bifida (a congenital defect of the spine in which part of the spinal cord and its meninges are exsposed through a gap in the backbone) etc. The incidence of club foot (CF) varies between countries.

In talipes varus (a deformity of the foot and ankle that a baby can be born with) the foot usually turns inward so that the leg and the foot look similar to the letter J. In tallipes valgus (a congential deformity of the foot in which it is rotated inward so that walking is done on the inner side of the sole) the foot rotates outward like the letter L. In talipes equinus (deformity of the foot a baby can be born with) the foot points downward, similar to a toe dancer. Last, in talipes calcaneus (curled shape of the foot) the foot points upward, with the heel pointing down. Talipes varus is the most common form of clubfoot. Talipes equinovarus is the most common form of talipes. Tendons inside of the leg of people with clubfoot are shortened, bones have an unusual shape and Achilles tendon is tightened, left untreated patients often appear to walk on their ankles or on the sides of their feet. There are also problems with fitting shoes and participating in normal play.

Most types of clubfoot are present at birth and it can happen in just one or even both feet. You are suddenly faced with new emotions and challenges, from greif and confusion to concerns about the future. You will have to make as a family and stay strong for your family and your baby. Steps need to be taken with all family members, it may be stressful to work with the unsympathetic family members but, all members of the family need to take steps together. Although clubfoot is painless to a baby treatment needs to occur immediately or it can cause significant problems as the child grows. Risk of eventually developing arthritis is significant.

Clubfoot can also be a result of problems affect the nerve, muscle, and bone systems, such as a stroke or brain injury. And without treatment the child could find it hard to walk on the soles of their feet instead of the balls of their feet and sometimes the outside of the foot, and in severe cases the top of the foot could be in pain. Usually inward direction of the foot is covered first. An early treatment can usually equal a normal life.

Some say that a cause, in some cases, is a result of the positioning of the baby while it is developing in the womb. But experts today are saying that is not true. Modern day advances in genetics has allowed investigators to identify clubfoot as a heterogeneous disorder with a polygenetic threshold model explaining its inheritance patterns. But besides both of those claims and even the facts some say the cause of clubfoot can still be identified as unclear.

Males are twice as likely as females to be born with clubfoot. And if a parent is born with clubfoot there is a higher risk of his or her baby to be born with the same. The same applies to the siblings, one parent has it there is a 3 to 4% chance the child will have it. If both parents have it then there is a 15% chance.

Diagnosis can sometimes be determined through x-rays and sometimes they cannot because of how the baby is positioned. Sometimes you just have to wait until the birth of the baby. The Ponseti method is where a specialist manipulates the baby's foot with their hands. The aim is to correct the bend in the foot. Then a plaster cast is applied from the patient's toes to their thigh to hold the foot in position. Each session is generally done once a week. The manipulation and casting are done very gently and the patient should experience no pain. At each session the plaster cast is changed, and each time the foot is corrected a tiny bit more. The whole process may be done 4 to 10 times (4 to 10 new casts used).

Surgery is another; the doctor will then (after Ponseti method treatment) decide whether a minor operation on the Achilles tendon (to release it) is needed. When the foot is eventually corrected the patient has to wear special boots attached to a brace to hold the foot (feet) in the best position. For two to three months the boots are worn 23 hours a day; eventually they are just worn at night and during daytime naps- until the patient is about four years old. For the Ponseti method to be effective it has to be done very early on and parents have to make sure the boots are worn according to instructions. If instructions are not followed strictly, the foot may go back to the way it was, and treatment has to start again.

Last is The French functional method. **It** consists of daily stretching, exercise, massage, and immobilization of the foot with nonelastic tape to slowly move the foot to the correct position. These therapy sessions are performed primarily by a physical therapist for the first three months, when most of the improvement occurs, but parents receive training during this time in order to perform some of the treatments at home. The taping and splinting continues until the child is two years old. **It** is important to note that this method is currently not available in many parts of the United States.

Work Cited Page

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Work Sample Evaluation

Subject Area: Human Anatomy and Physiology
Task Title: A Bone to Pick
Student Work Sample Title: Clubfoot

The document was scored using the *CCR Task Bank Rubric*. The final scores are indicated in the following chart.

Scoring Criteria	Insufficient Evidence	Developing	Progressing	Accomplished	Exceeds
Research and Investigation			**X**		
Ideas and Content		**X**			
Reading and Analysis			**X**		
Communication			**X**		
Organization		**X**			
Accuracy			**X**		

Annotations: The following evidence from the work sample and the reviewer's comments support the scores above. Page and line numbers refer to the original work sample.

Scoring Criteria	Page #	Line #	Commentary about the work sample
Research and Investigation: *Locating resources independently and/or identifying information within provided texts*	5-6	3-1	The work sample uses eight different sources, including four journals and two government sources.
Ideas and Content: *Presenting a thesis and understanding concepts*	1	3-5	The thesis statement is very narrow and does not address the entire scope of the paper.
	2	9-19	The work sample provides a very good description of the different types of clubfoot deformities.
Reading and Analysis: *Evaluating sources and selecting evidence to support the central idea*	1	9-22	One of the sources used in the paper is an analysis of research data from Denmark.
			The work sample does not employ in-text citations. It appears that the student thoroughly read and utilized the sources but did not cite sources in the paper.
Communication: *Using subject-appropriate language and considering audience*	1	3	The paper provides the type of information a first year medical student specializing in orthopedic medicine would provide.
	1	14-22	Standardized research data is included in the paper and is appropriate for a medical student.
	2	2-8	The student uses the proper medical terminology.
Organization: *Structuring main ideas and supporting information*	2	8	The student repeats information from a previous paragraph, thus making it redundant.
	3	6-10	The student relates causes back to genetics after describing how clubfoot affects the body systems.
			The student skips from topic to topic with no apparent transitions.
Accuracy: *Attending to detail, grammar, spelling, conventions, citations, and formatting*	1		There are several typographical errors on the first page that may have been formatting errors.
	2	21, 22	The student uses "you" and "your" four times throughout the paper.
	2	21	The word "grief" is misspelled.
	3	2, 11	Two different sentences within this page are incomplete and fragmented.
			The sources on the Works Cited page are not cited correctly.