

Research Article

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Minimal Brain Dysfunction, Syndrome of Contractures and Deformities, So-Called Idiopathic Scoliosis, Problem of Hips and Knees-in 12 Points and 12 Figures

Prof. Tomasz Karski MD PhD^{1*}, Dr Jacek Karski MD PhD², Dr Klaudia Karska MD², Dr. Katarzyna Karska², MA Honorata Menet³

¹Vincent Pol University of Lublin, Poland

²Medical University of Lublin, Poland

³University of Caen, France

*Corresponding Author

Prof. Tomasz Karski MD PhD, Vincent Pol University of Lublin, Poland.

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Abstract

In the article we describe causes and symptoms of 1/ Minimal Brain Dysfunction, the symptoms of 2/ the Syndrome of Contractures and Deformities, 3/ the etiology of the So-Called Idiopathic Scoliosis and present some problems of 4/ hips, knees and ankle joint. The article presents also the rules of prophylaxis and therapy for hips in children and in adults as well proper therapy of the So-Called Idiopathic Scoliosis.

Keywords: Minimal Brain Dysfunction, Syndrome of Contractures and Deformities. Hips. Knees. Scoliosis. Symptoms. Rules of therapy and prophylaxis.

Introduction

The proper therapy is possible if the proper diagnosis is first established. In the article we present the disorders and malformations of the locomotor system and rules of diagnosis and therapy. In the article are described:

- Minimal Brain Dysfunction (MBD),
- Syndrome of Contractures and Deformities (SofCD),
- Problems of hip – children and adults,
- So-Called Idiopathic Scoliosis – etiology, classification. Information about - old incorrect therapy and about the new – proper methods of prophylaxis and treatment,
- Knee problems connected with improper way of sitting,
- Foot problems.

The disorders of locomotor system should be diagnosed at an early stage of life of the child and therapy introduced promptly. This is the best form of prophylaxis of locomotor system disorders and diseases for adults. [1-39]. All observations are based on material of thousands of patients from 1961 – 2020, but especially from 1995 - 2022.

2 The problems we present in 12 points:

2.1. Presentation of the first group of pathology in result of Minimal Brain Dysfunction

(Figure 1) (A-G) [17-27]. Around 18 % of our material are such cases. In examination, we suspected that there were some

complications during the pregnancy or the delivery, what was confirmed by parents in anamnesis. In such a situation, asphyxia of the fetus can occur. Here, according to obstetrics and gynecologists (Prof. Jan Oleszczuk and coauthors), [22, 23, 28-31].

we present the list of such complications:

- Chronic inefficiency of placenta and intrauterine limitations of fetus growth,
- Oligohydramnios and spotting,
- Uterus contractions during pregnancy,
- Excessively intense action of uterus during delivery as well as uterine tetanus,
- Hypertension, hypotension and anemia,
- Infection of urinary tract,
- Difficult delivery and use of forceps during delivery,
- Stress and noise,
- Overdoses or improper medication during delivery and Twin Twin Transfusion Syndrome,
- Mellitus at newborns – bigger than normal - first communication – Prof. Harald Thom from Heidelberg (T. Karski - DAAD stay in Heidelberg & Essen, 1972 – 1973).

In figures we present disorders in hips, pelvis, knees and feet and also symptoms of general laxity according Wynne Davies.

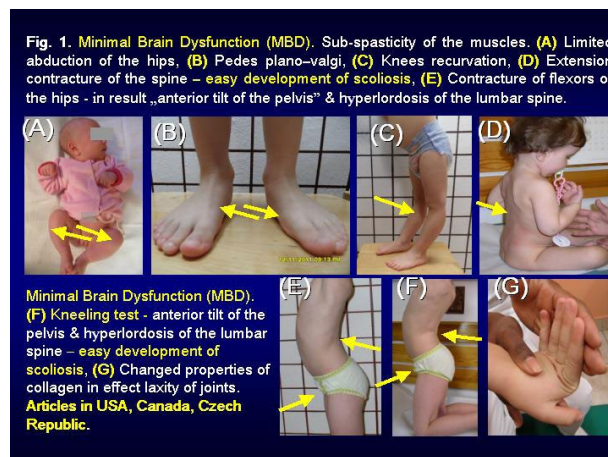


Figure 1: Minimal Brain Dysfunction (MBD). Sub-spasticity of the muscles. (A) Limited abduction of the hips, (B) Pedes plano-valgi, (C) Knees recurvation, (D) Extension contracture of the spine – easy development of scoliosis, (E) Contracture of flexors of the hips - in result „anterior tilt of the pelvis” & hyperlordosis of the lumbar spine. Articles in USA, Canada, Czech Republic. (F) Kneeling test - anterior tilt of the pelvis & hyperlordosis of the lumbar spine – easy development of scoliosis, (G) Changed properties of collagen in effect laxity of joints.

There are:

- (A) Limited abduction of the hips, because of spasticity or sub-spasticity of adductors of hips – in result dysplasia can develop.
- (B) Pedes plano-valgi – compensatory deformations because of shortening of m. triceps surae and Achilles tendon,
- (C) Recurvation of the knees also as an effect of shortening of the Achilles tendons and m. triceps surae.
- (D) Sub-spasticity of extensors of trunks and in result - extension contracture of the spine.
- (E) Contracture of flexors of the hips. In result „anterior tilt of the pelvis” and compensatory hyperlordosis of the lumbar spine.
- (F) The same deformity like in Fig. E in kneeling test – important method in diagnosis.
- (G) Changed collagen in effect laxity of the joints – one of ten symptoms according Wynne – Davies.

2.2. Presentation of the second group of pathology described as the Syndrome of Contractures and Deformities (Figure 2) [1-7, 9-27].

This pathology is connected with improper “development conditions” for fetus in pregnancy period – from the mother’s side, or from child’s side. The is lack of proportion of size of fetus – it means - length and weight – and of space of uterus – it means - improper mother abdomen and pelvis anatomy. The Syndrome of Contracture and Deformities had been described first by Prof. Hans Mau from Tübingen (Germany 1960-1970) as *Siebenersyndrom* (German)-it means “Seven Contractures Syndrome” (SofC) (English). In 2006 we (T. Karski, J. Karski) complete this SofC for eights deformity – “Varus deformity of shanks” and from this time our diagnosis is “Syndrome of Contracture and Deformities” (SofCD).

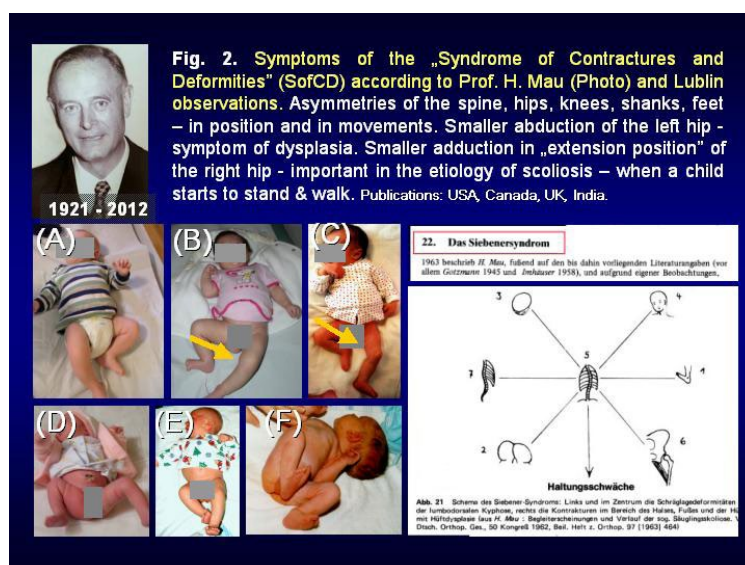


Figure 2: Symptoms of the „Syndrome of Contractures and Deformities” (SofCD) according to Prof. H. Mau (Photo) and Lublin observations. Asymmetries of the spine, hips, knees, shanks, feet – in position and in movements. Smaller abduction of the left hip - symptom of dysplasia. Smaller adduction in „extension position” of the right hip - important in the etiology of scoliosis – when a child starts to stand & walk. Publications: USA, Canada, UK, India.

In the „Syndrome of Contractures and Deformities” there are asymmetries of the axis of spine, in range of movements of hips, in anatomy of knees, shanks, feet. Smaller abduction of the left hip is typical and because of this dysplasia of this hip is more frequent. Why is the left hip more frequently affected? Because 90 % or 95% of fetus cases are placed on the left side of mother uterus - observation of all gynecologists.

Often there are also differences of adduction – in straight position of hip joint. It is smaller adduction in „extension position” of the right hip – and it is important in the etiology of so-called idiopathic scoliosis – when child starts to stand & walk. Observations of T. Karski since 1984/1995 – 2007 till now.

2.3. Problems of hips – children. Information about improper nursing of children (Figure 3) [1-39].

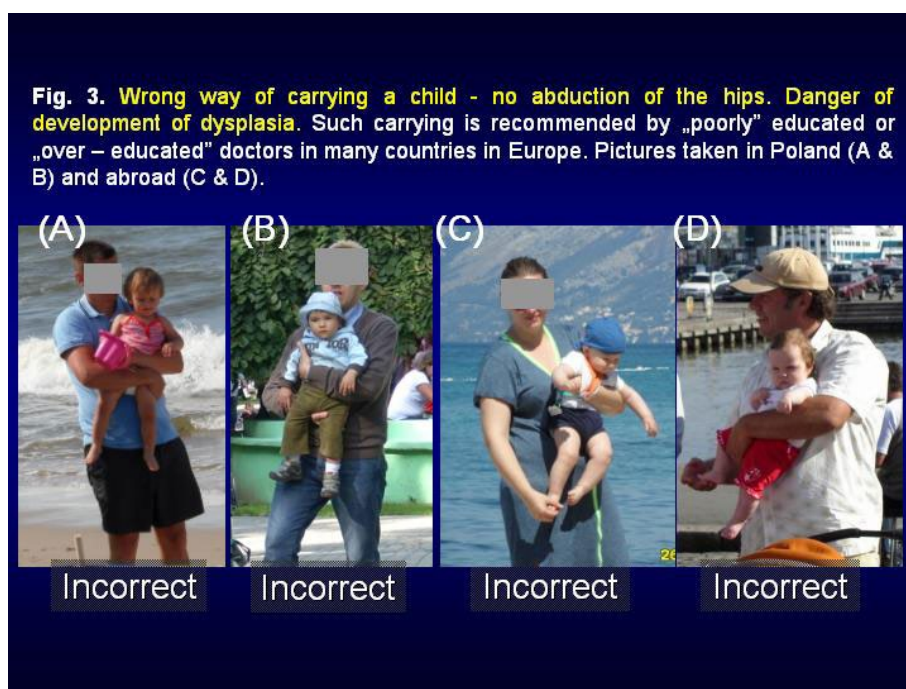


Figure 3: Wrong way of carrying a child - no abduction of the hips. Danger of development of dysplasia. Such carrying is recommended by „poorly” educated or „over – educated” doctors in many countries in Europe. Pictures taken in Poland (A & B) and abroad (C & D).

As said above, in the „Syndrome of Contractures and Deformities” (SofCD) we often observe the limited abduction mostly left hip and in result can be hip dysplasia. Unfortunately, the nursing often is not proper. Wrong way of carrying children - without abduction of hips – is the cause of improper development of hips and can result in dysplasia. Such carrying is recommended by „poorly” educated or „over-educated” doctors in many countries in Europe. On the pictures we present not properly carried the children leading to dysplasia or even to dislocation of the hip.

2.4. Problems of hips-children. Information about proper nursing of children and therapy of wry neck (Figure 4) [1-39].

The correct way of carrying a child means assurance for good development of hips. It is the best form of “prophylaxis of the hips dysplasia”. Such carrying should be done one or two years. In pictures (Figure. 4A Figure 4B) is presented proper therapy of the wry neck on left side (Figure 4B, 4C) on right side. Permanent rotation stretching of the head to the wry neck side is the only proper method of therapy. Such therapy was introduced in University Pediatric Orthopedic Department in Lublin in July 1974. Articles about this treatment were published in Germany in 1991 and in USA in 2017.

Fig. 4. The correct way of carrying a child. Prophylaxis of the hips dysplasia (A) (B). Proper therapy of the wry neck / torticollis – in (B) on the left and in (C) on the right. Permanent rotation stretching of the head to the wry neck side is the only proper method of therapy. Articles about this method in Germany and in USA [T. Karski 1991 & 2017, 2020].



Figure 4: The correct way of carrying a child. Prophylaxis of the hips dysplasia (A) (B). Proper therapy of the wry neck / torticollis – in (B) on the left and in (C) on the right. Permanent rotation stretching of the head to the wry neck side is the only proper method of therapy. Articles about this method in Germany and in USA [T. Karski 1991 & 2017, 2020].

2.5. Problems of hips-adults. Information about prophylaxis methods. Special form of standing (Figures 5A-5D).

If in the childhood the hips are not treated perfectly - develop arthrosis. In the case - **Figure 5A** heavy symptoms of arthrosis – lateralization of the femoral head, their necrosis and deformations. Clinically – heavy pain, limping. In the **Figure 5B** the process of arthrosis is in both hips – but in right hip bigger - because of permanent standing ‘at ease’ on the right leg. It is the new Syndrome discovered in 1997 – T. Karski and presented in many articles [8-41].

In prophylaxis and in therapy of hips arthrosis standing is important. In the picture - **Figure 5C, 5D** - physiotherapy methods for prophylaxis of arthrosis of the hips are presented. A special form of standing and sitting should be introduced for patients at the age of 45 – 50. Standing in abduction and in internal rotation changes the loading on the femoral heads, enables regaining internal rotation. Such standing – should be performing - every day in every situation over many years.

Fig. 5. (A) Example of advanced arthrosis in the left hip with heavy symptoms - pain, limping. Never treated in childhood. (B) Pain in both hips – in right hip because of permanent standing ‘at ease’ on the right leg. (C) and (D) proper standing – easy method for effective prophylaxis of hips arthrosis.

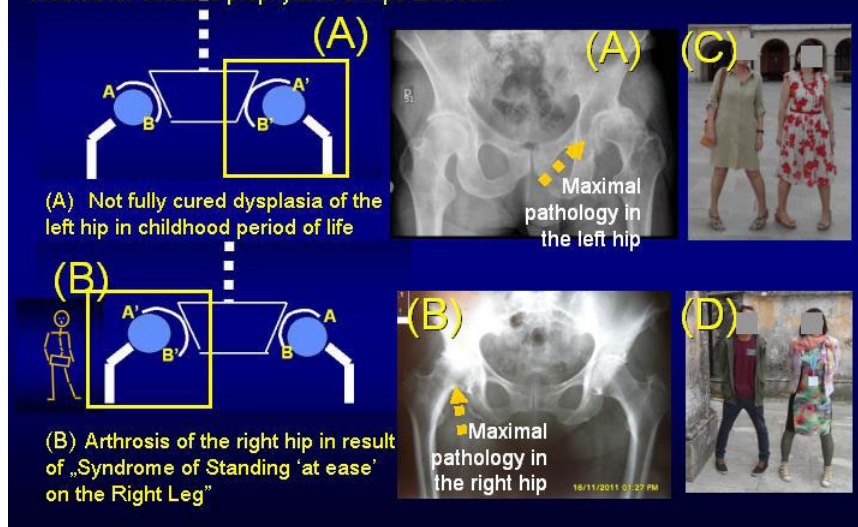


Figure 5: (A) Example of advanced arthrosis in the left hip with heavy symptoms - pain, limping. Never treated in childhood. (B) Pain in both hips – in right hip because of permanent standing ‘at ease’ on the right leg. (C) and (D) proper standing – easy method for effective prophylaxis of hips arthrosis.

2.6. Problems of hips – adults. Information about prophylaxis methods. Special form of sitting (Figure 6) [20-24].

A special manner of sitting is crucial in the prophylaxis and in therapy of hip arthrosis. Pictures demonstrate methods of physiotherapy as prophylaxis of arthrosis of the hips. A special form of standing and sitting should be introduced at the age of 45 – 50. Sitting – in internal rotation, what increases the range of this hip movement. The internal rotation of hips is

necessary during walking. During gait – in swing phase – leg in “back position” need “internal rotation of the joint”. If is not present the internal rotation of the hip – by every step – appear irradiation process of soft tissues – in result difficulties in blood circulation and arthrosis of femoral head. Patients should sit in internal rotation position for hips every day in every situation. Additionally - sport in the form of „Nordic walking” is also very important (Figure 6).

Fig. 6. Sitting. Methods of physiotherapy as prophylaxis of arthrosis of the hips. A special form of standing and sitting should be introduced at the age of 45 – 50. Sitting – in internal rotation, which increases the range of this movement. Patients should sit in this position every day in every situation. Sport in the form of „Nordic walking” is also very important.



Figure 6: Sitting. Methods of physiotherapy as prophylaxis of arthrosis of the hips. A special form of standing and sitting should be introduced at the age of 45 – 50. Sitting – in internal rotation, which increases the range of this movement. Patients should sit in this position every day in every situation. Sport in the form of „Nordic walking” is also very important.

2.7. So-Called Idiopathic Scoliosis. Information about basic and additional causes of this spine deformity (Figure 7) [4-39].

In research of scoliosis – it was found that during test “of adduction of hips” - in their extension position - the range of the movement in the right hip is limited. First observation were performed in years 1984 – 1995. This situation has influence

on function - during walking and in standing position. The influence in development of spine curves is through function: “standing ‘at ease’ on the right leg” which is permanent and through “walking”. The both functions are the basically causes in the etiology of scoliosis. The etiology is fully described by T. Karski in 1995 – 2007 – www.ortopedia.karski.lublin.pl

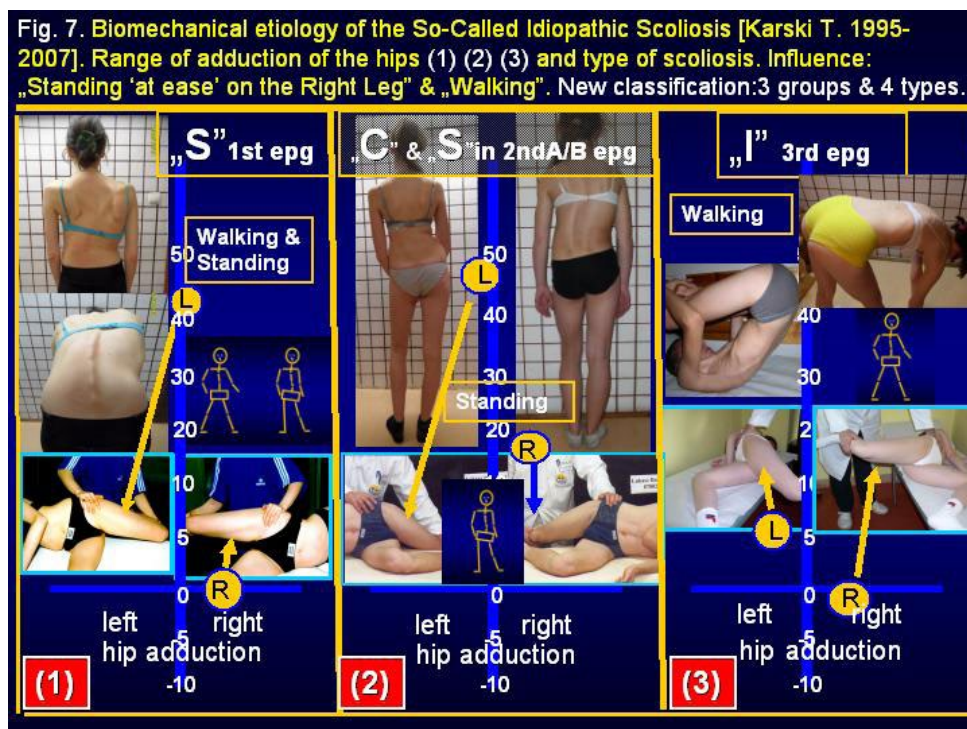


Figure 7: Biomechanical etiology of the So-Called Idiopathic Scoliosis (AIS) [Karski T. 1995-2007]. Range of adduction of the hips (1) (2) (3) and type of scoliosis. Influence: „Standing ‘at ease’ on the Right Leg” and „Walking”. New classification - 3 groups & 4 types.

Spine deformity develops because of the asymmetry of time of loading – right: left leg – more on the right leg and during “walking”. The explanation “of walking” is the following – 1/ there is maximally limited or absent - adduction and internal

rotation movement of right hip, 2/ during gait is compensatory “created” this movement in pelvis and spine, 3/ but make in spine “rotation distortion” and in result deformity of spine with their stiffness (Figure 8-10).

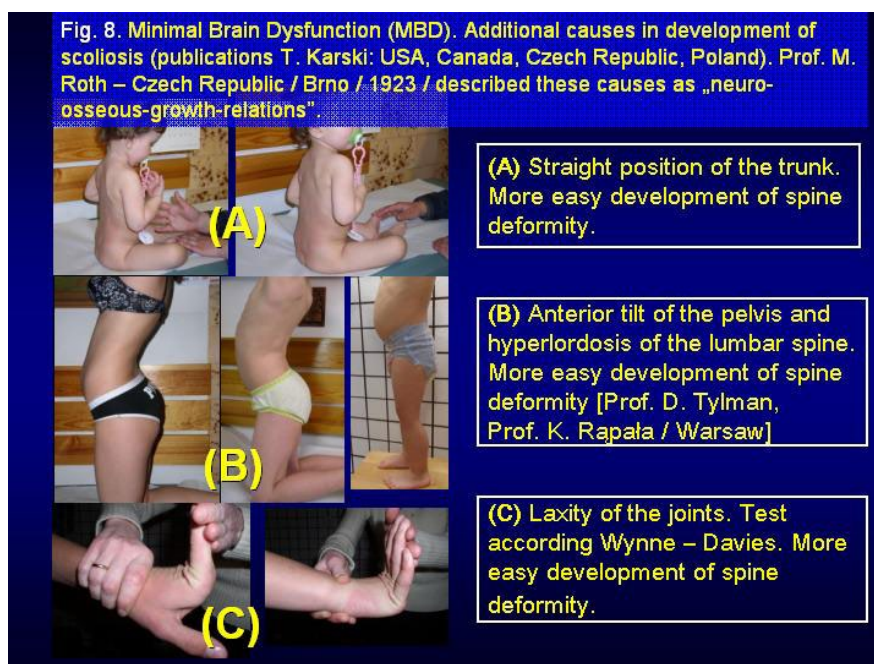


Figure 8: Minimal Brain Dysfunction (MBD). Additional causes in development of scoliosis (publications T. Karski: USA, Canada, Czech Republic, Poland). Prof. M. Roth – Czech Republic / Brno / 1923 / described these causes as „neuro-osseous-growth-relations”. (A) Straight position of the trunk. More easy development of spine deformity. (B) Anterior tilt of the pelvis and hyperlordosis of the lumbar spine. More easy development of spine deformity [Prof. D. Tylman, Prof. K. Rapala / Warsaw]. (C) Laxity of the joints. Test according to Wynne – Davies. More easy development of spine deformity.

3. There are 3 groups & 4 types of so-called idiopathic scoliosis (Figure 7) - (3.1) (3.2) (3.3):

3.1 First group of scoliosis – 1st etiopathological group (epg) is “S” deformity and is connected with “gait” & “standing ‘at ease’ on the right leg. Deformity is in form 3D – stiff spine, two curves, rib hump on right side of thorax. Progression. Some cases “lordoscoliosis”.

3.2 Second group – 2nd A & B epg - “C” or “S” deformity connected with “standing ‘at ease’ on the right leg”. Deformity is 1D or 2D. Spine flexible. Some cases “kiphoscoliosis”. In “S” scoliosis in etiology additionally laxity of joints or / and incorrect previous therapy.

3.3 Third group – 3rd epg is - “I” deformity – only stiffness of spine, no or small curves. Deformity is 2D or 3D. This group of spine deformity was included to scoliosis group and type of Lublin classification in 2004 (T. Karski).

2.8. So-Called Idiopathic Scoliosis. Information about additional causes of this spine deformity (Figure 8) [4-39].

Minimal Brain Dysfunction (MBD) is the additional cause in development of so-called idiopathic scoliosis (publications T. Karski: USA, Canada, Czech Republic, Poland). Some scientist thought that abnormalities of Central Nerve System are primary and exclusive causes of “the idiopathic scoliosis”. Prof. M. Roth – Czech Republic / Brno / 1923 / described these causes as „neuro-osseous-growth-relations”. We confirm this observation - but according ours research the MBD abnormalities are only additional cause in development of scoliosis. These abnormalities are following:

a. Straight position of the trunk makes the development of spine deformity easy. In 1st and in 3rd group of the so-called idiopathic scoliosis the spine is “stiff in straight position”.

b. Anterior tilt of the pelvis and hyperlordosis of the lumbar spine make more easy development of spine deformity. These observations were made before us in years 1970-1976 by Prof. Donat Tylman and Prof. Kazimierz Rapala from Warsaw.

c. Laxity of the joints – facilitates the development of scoliosis. On Figure is presented one of ten tests according Wynne – Davies.

2.9. Information about old incorrect therapy of the So-Called Idiopathic Scoliosis (Figure 9) [4-39].

A/ Incorrect therapy of the So-Called Idiopathic Scoliosis stems from false thinking about causes of etiology and lead to mis-therapy of the scoliosis. The conviction that spine curves are caused by weak muscles, persists among orthopedists. The rules of therapy were to recommend muscle-strengthening exercises. Doctors recommended extension exercises and the results were only bad. In such situations, doctors would tell parents and patients that “it is the natural history of scoliosis”. Our explanation is the following: No - it was the result of an incorrect therapy. In figures we present examples of wrong and harmful exercises (Figure 9 (A-C) (D1, D2)). After such incorrect therapy and in the case (D) also surgery – developed iatrogenic deformity, big curves, big rib hump and maximally stiff spine as result of wrong therapy. We present these pictures because “such therapy” is still recommended in Poland and in many others countries.



Fig. 9. Example of wrong and harmful therapy in scoliosis (A) (B) (C). After such incorrect exercises plus corset in (D1&D2) - iatrogenic deformity, big curves, stiff spine, big rib hump, impossible to compete in sport, pain.

Figure 9: Example of wrong and harmful therapy in scoliosis (A) (B) (C). After such incorrect exercises plus corset in (D1&D2) - iatrogenic deformity, big curves, stiff spine, big rib hump, impossible to compete in sport, pain.

2.10. Information about new correct therapy of The So-Called Idiopathic Scoliosis (Figure 10) [4-39].

Proper therapy of the So-Called Idiopathic Scoliosis: only flexion stretching exercises leading to the “symmetry of function”, left and right hip and left right side of the spine, thus of the body, are proper. Stretching exercises give good chance for symmetrical correct growing processes of the spine. We introduced this method of therapy in 1995. Here – our obligation is to inform that flexion exercises in therapy of scoliosis were recommended in years 1960 – 1970 by Prof. Stefan Malawski from Warsaw,

however in this time the etiology was not known.

Standing only on the left leg is very important – because such standing is not permanent and does not give input to asymmetrical growth of the spine. Very important in therapy are sports like karate, taekwondo, aikido, kung fu, yoga and should be done / performed since the first years of child's life. These sports are beneficial - because include elements of stretching of shortened parts of the soft tissues in region of hips, pelvis and spine.



Figure 10: Stretching exercises proper for scoliosis. Prof. S. Malawski from Warsaw was the first who recommended flexions exercises. Important also standing only on the left leg & karate, taekwondo, aikido, kung fu, yoga.

2.11. Problem of knees connected with incorrect position of sitting (Figure 11) [19-24].

Pain syndromes of knees are very frequent at many patients. Between various causes – like - varus deformity, valgus deformity and in result instability of knee joint - the improper and wrong position of sitting lead also to instability of knee

joint – and because of this is the cause of the pain syndromes. Such sitting is the cause of wrong axis of the legs at children and very often cause of the pain at adults. It is also the cause of limited movement of the hip or hips and also cause of the hip pain. Articles: India, UK.

Fig. 11. Wrong sitting position. Such position is the cause of instability of the knee joints and pain. It is also the cause of limited movement of the hip or hips and also cause of the hip pain. Articles: India, UK.



Figure 11: Wrong sitting position. Such position is the cause of instability of the knee joints and pain. It is also the cause of limited movement of the hip or hips and also cause of the hip pain. Articles: India, UK.

2.12. In Podology (Figure 12) [19-24]. For feet very important are proper shoes. On figure (A) and (B) we present improper shoes. (A) reduce dorsal flexion in ankle joint and (B) reduce the plantar flexion of toes in metatarsal phalange joints. In effect – pain, difficulties in walking. In photos (C) and (D) proper exercise for toes. In picture (E) improper way of getting out of the car – one leg – in result rotation distortion of ankle joint

and knee. Clinically there are swelling and pain in back part of left foot (in right hand traffic countries), in some patients also left knee pain. These patients have difficulties in walking – sometimes for several years. In picture (F) the proper way of getting out of the car- two legs. First publication about this problem was in 2017 in USA next in India, Czech Republic (2016 – 2021). www.ortopedia.karski.lublin.pl point 17 [39].

Fig. 12. In Podology important proper shoes. (A) and (B) shoes improper - reduce dorsal flexion in ankle joint (A) and reduce the plantar flexion of toes in metatarsal phalange joints (B). In photos (C) and (D) proper exercise for the toes. In picture (E) improper getting out of the car – one leg – in result rotation distortion of ankle joint and knee. In picture (F) proper getting out of the car- two legs. Publication about this subject in USA, India, Czech Republic (2016 – 2021). See www.ortopedia.karski.lublin.pl



Figure 12: In Podology important proper shoes. (A) and (B) shoes improper - reduce dorsal flexion in ankle joint (A) and reduce the plantar flexion of toes in metatarsal phalange joints (B). In photos (C) and (D) proper exercise for the toes. In picture (E) improper getting out of the car – one leg – in result rotation distortion of ankle joint and knee. In picture (F) proper getting out of the car- two legs. Publication about this subject in USA, India, Czech Republic (2016 – 2021). See www.ortopedia.karski.lublin.pl

4. Discussion and Conclusions.

Proper status of locomotor system in adults depends of proper prophylaxis and therapy in children. Many older people have the symptoms of hips arthrosis and it is the result of not fully treated hip dysplasia in the childhood.

This is also relevant to back pain syndromes - if the anterior tilt of pelvis is not treated, hyperlordosis can develop. Another cause of back pain at adults is not treated or wrongly treated scoliosis in children.

Knee pain syndrome is very frequently connected with "improper sitting".

I (T. Karski) have been presenting the biomechanical etiology of the so-called idiopathic scoliosis for 28 years already. This / my explanation has not been understood and adopted in Poland. Nevertheless, me, as well as the co-authors, am full of hope that this article will be "an important input in the new knowledge" of both problems – hips and spine, and it will be transmitted from USA to other countries.

In addition, the information about how to get out of small cars will protect many people from ankle joint and knee pain syndromes.

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