

So-Called Idiopathic Scoliosis. Historical Dates of Discoveries. Fate and Fortune of New Knowledge

Karski Tomasz*

Professor Lecturer in Vincent Pol University in Lublin, Poland

*Corresponding author

Tomasz Karski, Professor Lecturer in Vincent Pol University in Lublin, Poland

Submitted: 02 Sept 2020; Accepted: 08 Sept 2020; Published: 15 Sept 2020

Abstract

The biomechanical etiology of the so-called idiopathic scoliosis [Adolescent Idiopathic Scoliosis (AIS)] has been the subject of the author's research since 1984. In the period from 1984 till 2020 many children with scoliosis have been observed (N-2500). During this time all information about etiology, classification, new therapy and causal prophylaxis has been provided. The principle information about the subject was found in the years 1995-2007.

The etiology of AIS is strictly biomechanical and is connected with asymmetry of the hips movements and next with the function of the hips and the spine. Scoliosis develops because of "permanent standing 'at ease' on the right leg" and in some types connected with "gait". As causative influence: "standing" and "gait" is in "S" scoliosis in the 1st etiopathological group (epg), only "standing" in "C" 2nd / A epg and "S" 2nd / B epg group / type, in "I" 3rd epg type of scoliosis only "gait".

Keywords: Classification, Etiology, Opinions, Prophylaxis, So-called idiopathic scoliosis, Therapy.

Introduction

In 1984, for a one-month long scholarship stay in an Invalid Foundation Hospital in Helsinki, Finland I worked with scoliosis children. Dr Olai Snellman-performed many operations on children with scoliosis and I helped him as an assistant. In this time, I was absolutely determined to find the etiology of "idiopathic scoliosis". At this time, I had examined many children-mostly girls-but it was impossible to find the etiology using previous literature [1-7, 8-20]. In the years 1984-1995 I examined many scoliosis children in Lublin, in our Orthopedic Department and in the Out Patients Clinic-I found the asymmetry movement of the hips in all scoliosis children-limited adduction in scoliosis children. Next I found the biomechanical influences causing spine deformity in the form of scoliosis. Biomechanical influences are connected with, "permanent standing 'at ease' on the right leg" and with "gait". Why gait, the "blocked movement of the right hip during gait" produces a compensatory movement in the pelvis and in the spine-and is the cause of the rotation deformity of the spine.

The following elements determine the etiology of scoliosis:

- Asymmetry movement of the hips,
- Asymmetry time of loading left: right leg-more on the right,

- Rotation movement of the spine during walking
- In result "asymmetry growth of the spine"-scoliosis.

Thus, since 1995, I use the term "the so-called idiopathic scoliosis" instead of "idiopathic scoliosis" [21-43]

Material

In the years 1984-2018, more than 2,500 patients with scoliosis have been observed and treated. 80% of patients were aged 4 to 25. Older patients, in the age of 50-70 years, were coming for consultation because of spine pain and this group constituted 20 %.

In all cases of scoliosis, I found the same etiological factors-limited movement of the right hip in various forms-from full restriction to only a limitation.

Observation about the problem of scoliosis in 1984-1995. In the first observations was a group of 100 children and with this material was the first presentation at the Orthopedic Congress in Hungary. In the years 1995-2007 in examination of 1,500 patients with scoliosis all questions concerning the problem of scoliosis have been answered. In all children I noticed limited adduction in the straight position of the right hip joint. Some children had limited internal rotation and many of the children had also flexion contracture-mostly both hips. These asymmetries are the symptoms

of “Syndrome of Contracture and Deformities” according to Prof. Hans Mau [knowledge from Heidelberg and Essen 1972-1973 during my DAAD scholarship stay] and Lublin observations [1984-1988] (Figure 1, 2).

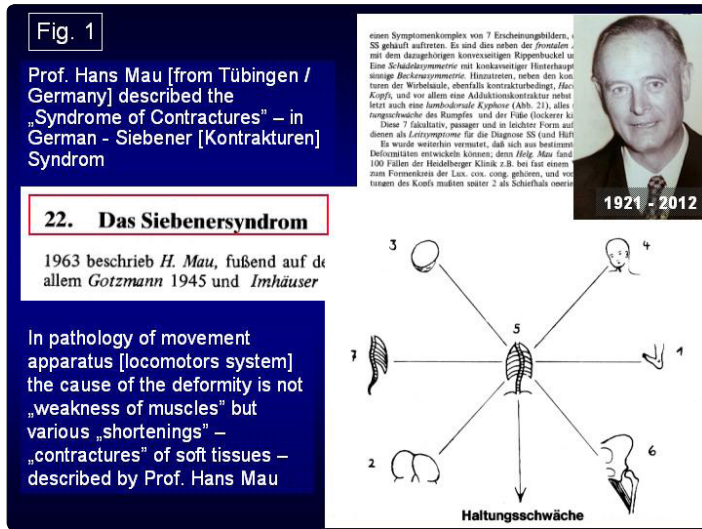


Figure 1: In pathology of movement apparatus [locomotors system] the cause of deformity is not “weakness of muscles” but various “shortenings”-“contractures of soft tissues”-described by Prof. Hans Mau. Taken-from the publication of Prof. Hans Mau [from Tübingen / Germany] who described the “Syndrome of Contractures”-in German-Siebener [Kontrakturen] Syndrom.

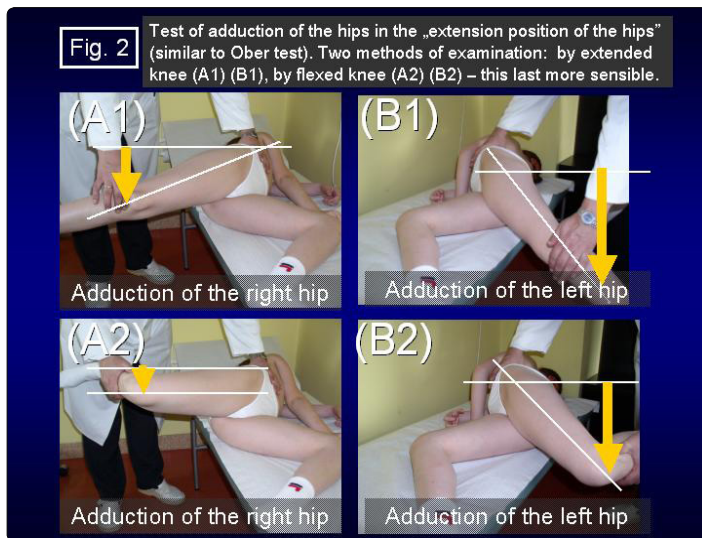


Figure 2: Test of adduction of the hips in the “extension position of the hips” (similar to Ober test). Two methods of examination: by extended knee (A1) (B1), by flexed knee (A2) (B2)-this last more sensible.

Flexion contracture of the hips is a symptom of Minimal Brain Dysfunction (MBD) described by myself in many articles (Literature 34, 35, 37, 38). The limitation of movement in the right hip consists of three various following groups [2006] (Figure 3):

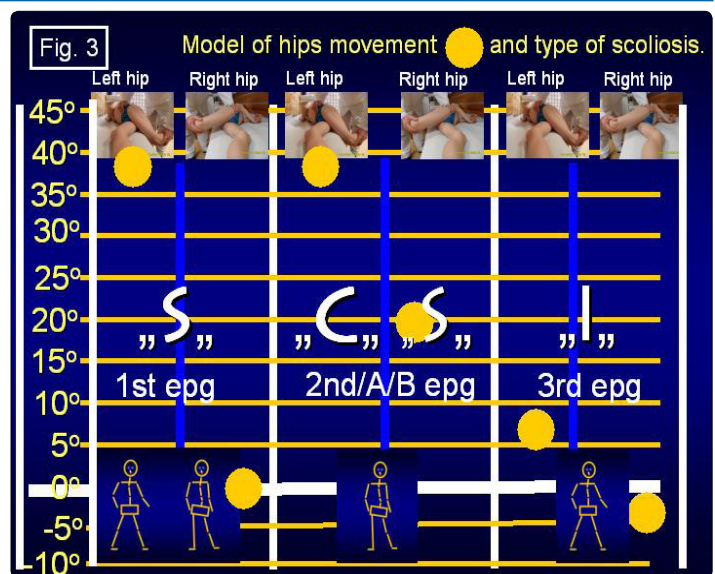


Figure 3: Model of hip movements and type of scoliosis

- First group-the adduction movement in the right hip is limited to 0 degrees, or to (-) 5 or to (-) 10 degrees and on the left side the adduction movement is 30-50 degrees,
- Second group-the adduction movement is only less and limited to 15-20 degrees in comparison to the left hip with the full movement of 30-50 degrees
- Third group-the adduction of the right hip is limited to 0 or (-) 5 or (-) 10 degrees and in the left hip adduction also limited to 0 or 10 or 20 degrees.

These asymmetrical movements of the hips make the oblique position of the pelvis and give functional influences to the spine during walking and standing [important cumulative time of standing]. In many cases of scoliosis, we see the “functional shortening of the left leg” because of the abduction contracture of the right hip. Changes in a “form of asymmetry of walking”-have an influence on the spine and are possible to see only in “computer gait analysis” [8-29, 43].

First presentation of the problem and first publication. The first presentation of the biomechanical etiology of the so-called idiopathic scoliosis was in 1995, in Hungary / Szegeed during the Orthopedic Congress of Hungarian Orthopedic and Traumatology Association. First publication was in Germany in the journal Orthopädische Praxis (1996).

Historical Dates of Discoveries

The dates in research of scoliosis (Karski T. 1995-2007/2020) are the following:

- 1995-the first lecture about biomechanical etiology of the so-called idiopathic scoliosis during the Orthopedic Congress in Szegeed, Hungary.

2. 1996-the first publication about biomechanical etiology of scoliosis in Orthopädische Praxis in Germany [21]: T. Karski [1996] Kontrakturen und Wachstumstörungen im Hüft- und Beckenbereich in der Ätiologie der sogenannten "idiopathischen Skoliosen"-biomechanische Überlegungen, Orthopädische Praxis 32, 3 (1996) 155-160

3. 2001 and 2004-giving the new classification: three (3) etiopathological groups (epg) and four (4) types of scoliosis:

a/ "S" scoliosis in 1st epg, (Figure 4).

b/ "C" and "S" scoliosis in 2nd epg., (Figure 5, 6).

c/ "I" scoliosis in 3rd epg. (Figure 7).

This last type-"I" scoliosis-before 2004 had not been classified as a scoliosis because this deformity consists only of "stiffness of the spine" without curves or only with small ones.

4. 2006-the ultimate description of the "type of hip movements" and the "type of scoliosis".

5. 2007-description of indirect influences to the spine going from the pathologic symptoms of Minimal Brain Dysfunction (MBD). The answer to the question "why blind children do not have scoliosis" has been found at this time as well.

6. 2000-2020-presentation of many lectures abroad in the following countries: Slovak Republic, Czech Republic, Hungary, Germany, England, Spain, Belgium, China-Hong Kong, China-Beijing, Egypt, Turkey, Morocco, Byelorussia, and Finland.

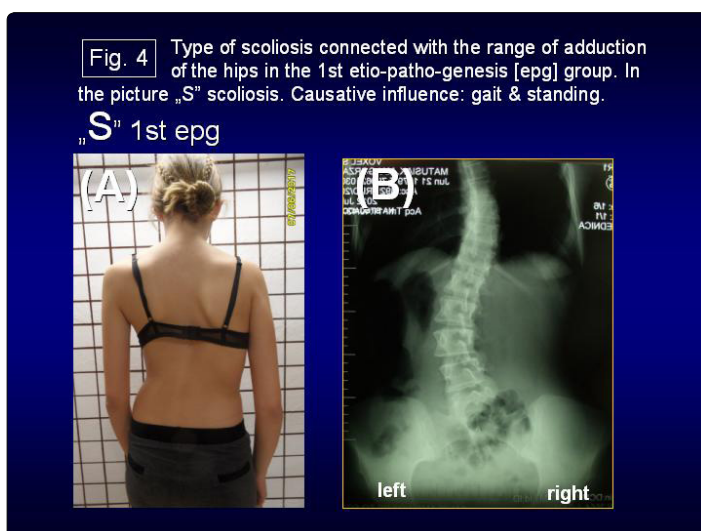


Figure 4: Type of scoliosis connected with the range of adduction of the hips in 1st etio-patho-genesis [epg] group. In the picture "S" scoliosis. Causative influence: gait & standing.

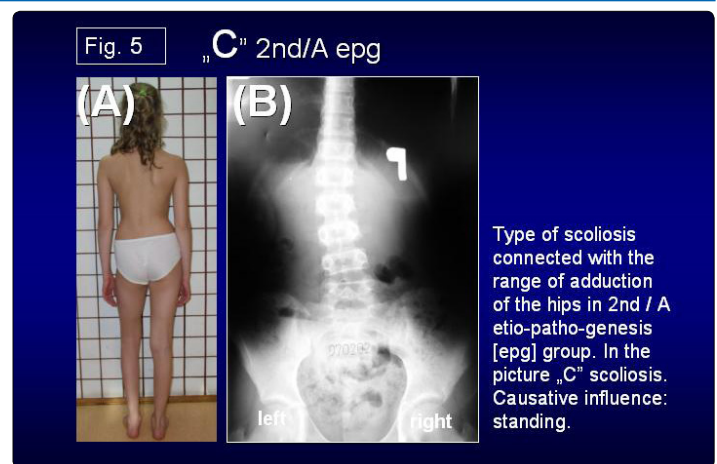


Figure 5: Type of scoliosis connected with the range of adduction of the hips in 2nd / A etio-patho-genesis [epg] group. In the picture "C" scoliosis. Causative influence: standing.

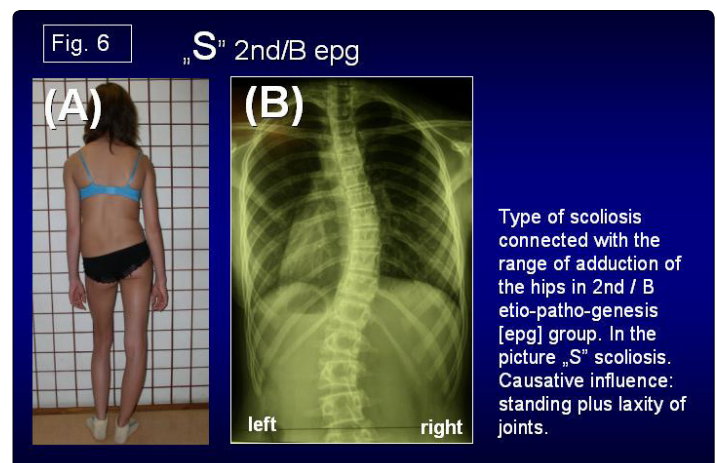


Figure 6: Type of scoliosis connected with the range of adduction of the hips in 2nd / B etio-patho-genesis [epg] group. In the picture "S" scoliosis. Causative influence: standing plus laxity of joints.

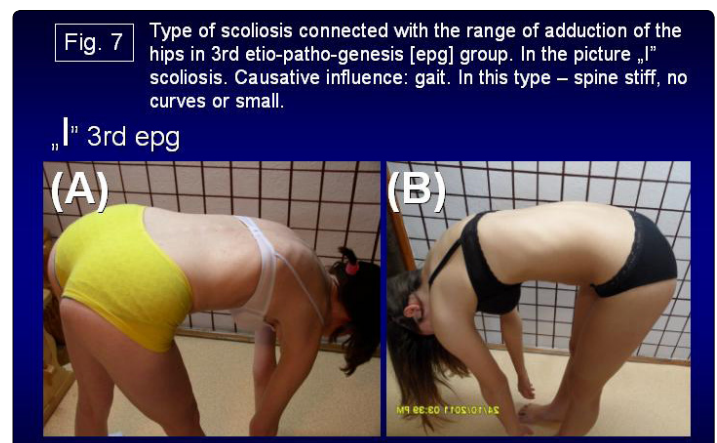


Figure 7: Type of scoliosis connected with the range of adduction of the hips in 3rd etio-patho-genesis [epg] group. In the picture "I" scoliosis. Causative influence: gait. In this type-spine stiff, no curves or small.

The Biomechanical Etiology of the So-Called Idiopathic Scoliosis Answers to All Questions Directed to The Problem [8-29,43].

In research of etiology of the so-called idiopathic scoliosis everybody will answer the question: what is “the etiology?”-and must answer all the questions about scoliosis.

These Are the Following Questions and Answers:

1. The etiology-is strict biomechanical-asymmetry of the anatomy of the body and the asymmetry movements of the hips. All these asymmetries are symptoms of a “Syndrome of Contractures and Deformities” (SofCD) according Prof. Hans Mau (original in German “Siebenersyndrom”-see Literature) and Lublin observations [2006-T. Karski].

In SofCD exist:

- a) asymmetry of loading during gait,
 - b) asymmetry of time of standing on the left or right leg-more on the right (!),
 - c) asymmetry in development and growth of the spine,
 - d) In result scoliosis as three etiopathological groups and four types.
2. Why girls have more frequent scoliosis? Answer-SofCD-appears mostly in girls.
3. Why lumbar left convex curve? Answer: The SofCD is mostly on the “left sided” (90-95 % of Pregnancies-Prof. Jan Oleszczuk / Lublin and all gynecologists) and asymmetries in children are similarly-left sided. In the right hip limited adduction-easy standing on the right leg.
4. Why the thoracic curve is right convex? Answer: The SofCD is mostly “left sided” as told above. Permanent standing on the right leg makes lumbar left convex curve and secondary right convex thoracic curve in 2nd / B etiopathological group (epg). Some cases in “S” 2nd / B epg scoliosis are “kifoscoliosis / kiphoscoliosis”.
5. Why is there one curve or two curves scoliosis? The answer: one curve scoliosis is “C” lumbar left convex deformity is in 2nd / A epg group connected with standing ‘at ease’ on the right leg. Double curve is “S” 2nd / B epg scoliosis-the spine is flexible. Cause-standing and laxity of joints or previous incorrect therapy.
Two curves scoliosis in form of “S” deformity is also in 1st epg group-the spine is stiff, some cases “lordoscoliosis”. Cause-standing and gait.
6. Why is the rib hump on the right side? The answer: The SofCD is mostly left sided. In “S” 1 st epg scoliosis is the permanent standing on the right leg and gait male secondary right convex curve and rib hump on the right side of the thorax connected with gait.
7. In which year of a child’s life does scoliosis start to develop? Every type of scoliosis starts to develop when the child starts to “stand” and “walk”-at the age of two-three years.
8. What kind of classification is proper? The proper classification is based on biomechanical etiology / influences connected with “the specific model of the hip movements” (T. Karski, 2006):
- a) 1st epg- “S” scoliosis-3D-with stiffness of spine-connection with gait and with permanent standing ‘at ease’ on the right leg. Some cases “lordoscoliosis”.
 - b) 2nd/A “C” scoliosis-connection with permanent standing ‘at ease’ on the right leg,
 - c) 2nd/B “S” scoliosis-connection with permanent standing ‘at ease’ on the right leg-plus laxity of the joints and / or incorrect exercises
 - d) 3rd epg “I” scoliosis-small curves or none, small gibbous or none-only stiffness of the spine. This group of scoliosis is connected with gait.
9. Why is there a rapid progression of scoliosis in the period of accelerated growth of a child? Answer: bones grow, contracted soft tissue in the region of the right hip and shortened tissue in the concave side of scoliosis do not grow and its influence becomes to be bigger (!), the deformity progress.
10. Which type of scoliosis progresses most? The progression is in the 1st epg “S” scoliosis, Other types of scoliosis-progress small or when the therapy was / is incorrect,
11. Which type of scoliosis, does not progress? The “C” 2nd/A epg, “S” 2nd/B epg scoliosis and “I” scoliosis in 3rd epg type are without progression, or without big progression.
12. Why do blind children not have scoliosis? The gait of blind children protects before scoliosis-their walk is without the lifting of the legs and every step is very carefully taken. They also stand carefully-symmetrical on both legs (observation of ophthalmologists). Do not exist biomechanical influences leading to scoliosis.
13. Are there any influences of CNS in the development of scoliosis? Yes-there are indirect influences in children with Minimal Brain Dysfunction (MBD) or with Attention Deficit Hyperactivity Disorder (ADHA)- [according to the author-MBD and ADHD is equal]:
- a) Extension contracture of the trunk-because of spastic (semi spastic) contracture of trunk extensors-make easy development of scoliosis.
 - b) Anterior tilt of the pelvis-because of spastic (semi spastic) contracture of m. rectus (part of m. quadriceps) both sides-make easy development of scoliosis.
 - c) “laxity” of joints-because of the changed properties of collagen-make easy development of scoliosis.

14. What kind of therapy-conservative or operative should be applied in the treatment? Answer: only conservative therapy. In material from 1995-2009, only 13 % of children needed surgery and there were children previously treated by wrong, or incorrect exercises. In the years 2010-2020 the number of children needing surgery in my material is maximally low-3 %.
15. Are extension exercises correct? No-such exercises are wrong-they cause “iatrogenic deformity”-bigger curves, bigger rib hump, stiffer spine (Fig. 8).
16. What kind of rehabilitation exercises should be applied? Only-stretching exercises (Fig. 9)-giving symmetry movements of the hips, of the spine, proper position of the pelvis and next enable symmetry growth and development. Important- “symmetrical time of standing on the left / right leg”. In such a situation scoliosis never develops. The proper sports are: karate, taekwondo, aikido, kung fu, yoga (Table. 1).
17. Corset treatment-yes or no? I had to use the corset in 20 % of children in “S” 1st epg scoliosis and in 5-10% of children in “S” 2nd / B epg scoliosis in the years 1995-2009. Now this percentage is much lower.
18. Is causative prophylaxis possible? Yes, the causative prophylaxis is possible. Should be introduced to children between the ages of 5-8 years. Exercises leading to symmetry movements and symmetry function of the hips and spine are important in prophylaxis and therapy.

Also it is very important to inform parents of young children about the correct position of standing-all children should stand ‘at ease’ only on the left leg (Table 1). Here, it is my moral obligation to inform you all, that “flexion exercises” in therapy of scoliosis in Poland during the years 1960-1970 were introduced by Professor Stefan Malawski from Warsaw/Otwock.

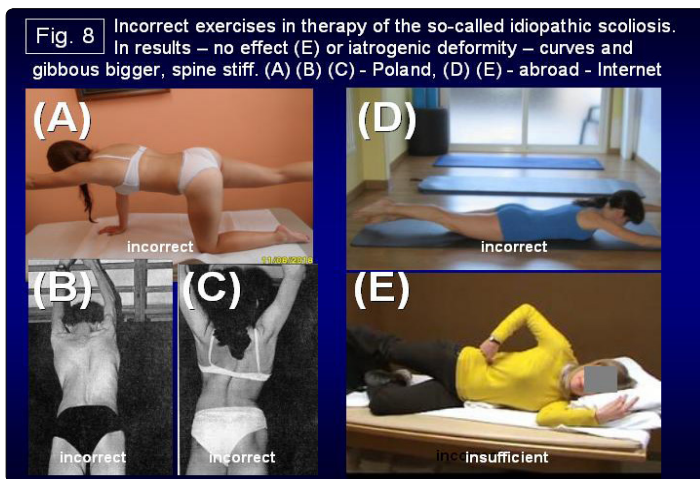


Figure 8: Incorrect exercises in therapy of the so-called idiopathic scoliosis. In results-no effect (E) or iatrogenic deformity-curves and gibbous bigger, spine more stiff. (A) (B) (C)-Poland, (D) (E)-abroad-Internet



Figure 9: Correct exercises plus sport [karate] in therapy of the so-called idiopathic scoliosis. Important is standing on the left leg, never on the right. This program is important in the treatment and in causal prophylaxis.

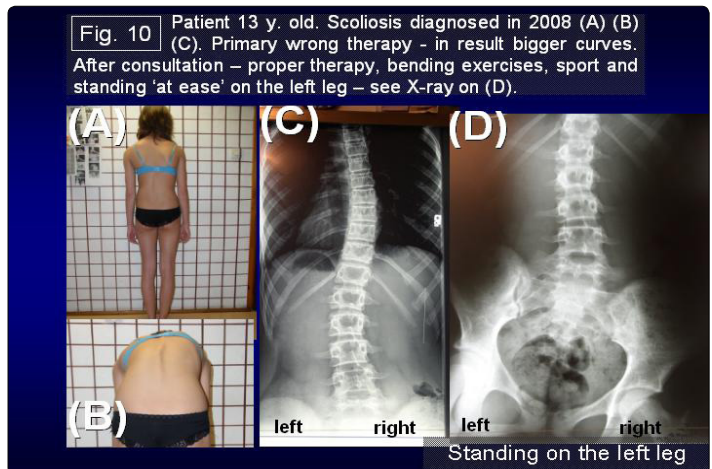


Figure 10: Patient 13 y. old. Scoliosis diagnosed in 2008 (A) (B) (C). Primary wrong therapy - in result bigger curves. After consultation-proper therapy, bending exercises, sport and standing ‘at ease’ on the left leg-see X-ray on (D).

Table 1: Recommendations in points in prophylaxis for children endangered and with the beginning of scoliosis.

Tab. 1	
Recommendations in points in prophylaxis for children endangered and with beginning of scoliosis	
[1]	Healthy child - standing ‘at ease’ on left, on right, on both legs – every position 33% of time
[2]	A child with beginning of scoliosis – standing ‘at ease’ only on the left leg
[3]	Sitting relaxed
[4]	Sleeping in the embryo position
[5]	Stretching exercises for hips, pelvis and spine
[6]	Active participation in sport - karate, aikido, taekwondo, kung fu, yoga

Scoliosis and its “fortune and fate”. New knowledge about the biomechanical etiology of the so-called idiopathic scoliosis had the various fate and fortune. Abroad had mostly positive reasons / understanding. It was so during my lectures in Congresses-in Hungary, Germany, UK, Morocco, Egypt, Turkey, China and Finland

Totally inverted and contrary was during my lectures in Poland. The “orthopedic opposition” of my Polish colleagues was very active, doing / making hard actions against new knowledge. It was so in the years 1995 to 2005. In these years my colleagues started with full blockage of mine with my presentations / lectures and publications. In the years 2005-2010 my colleagues had fully ignored and omitted the new knowledge. In the years 2010-2020 the articles and lectures were accepted in the USA, UK, Czech Republic, Italy, Asia countries, but not in Poland.

Regarding my theory of etiology and the new knowledge of the so-called idiopathic scoliosis my orthopedic colleagues were hard against during the Polish Orthopedic Congresses in Łódz (1998), Szczecin (2004) and Poznan (2012) and partially (only soft) during 16th SICOT Trainee’s Meeting 7-9th May 2009-Kolobrzeg, Poland.

Confirmation of The New Knowledge by Doctors and Professors Abroad and Two from Poland. It was and it is a big pleasure for me to admit / to receive the written confirmations of many professors, orthopedic surgeons from abroad. In the article I present the opinion of Prof. Franz Grill, Austria, Prof. Henry Bensahel, France, Prof. Martha Hawes, USA, Prof. Jan Stokes, USA, of Prof. John Sevastik, Sweden, Prof. Viktor Bialik, Israel, Prof. Stephen Eisenstein, England, Prof. Georg Neff, Germany, Prof. Ivo Mařík, Czech Republic, Dr Peter Tisovsky, Slovakia, Prof. Stefan Malawski-Otwock, Poland, Prof. Ignacy Wosko, Lublin, Poland.

Here I Present These Opinions:

Letter / Email from Prof. Franz Grill, Chief of Orthopedic Department Austria, Vienna, 2000

Dear Tomasz, many thanks for your letter. I was happy on your coming (info-to Vienna, 2000) and it was really interesting discussion (info-after my lecture about so-called idiopathic scoliosis), long time, mostly by Scholarship participants. Many of the Scholarship participants told me that your lecture was the best one. Many thanks for invitation to Symposium in Lublin. I will look to my Congress calendar and I will contact you. With best greetings. Franz

Letter / Email from Prof. V. Bialik, 2002

“I fully agree with you, that as the surgery in DDH (using sonography for early diagnosis followed by correct early treatment) and clubfoot (using Ponseti method) is today minimalized for these conditions, a similar way could be found for scoliosis. God help you in your efforts. Hope to meet you in good health in January in Bratislava. With best regards” / Sara & Viktor from Haifa. Israel.

Letter / Email from Prof. Prof. Stephen Eisenstein, 2004 / UK

“Dear Tomasz, during the very antagonistic session (Info-Congress of Polish Orthopedic and Traumatology Association in Szczecin, 2004) it became evident that shouting (info-against me)-by your colleagues and personality-were not going to resolve anything. Your concepts (info-of scoliosis) are controversial because they are not part of the universal perceptions at present. The only way to escape controversy is through a randomized controlled trial of sufficient number of subjects...”

Letter / Email from Prof. Henry Bensahel, France, Paris, 2004

I thank you very much for your book upon scoliosis. I have had the opportunity to read some papers from you on this topic. As yourself, I believe in physiotherapy, including in the spine deformities in children. Hence I congratulate you for this invaluable study. I do hope that we’ll have opportunity to meet again in the near future. With my best regards. Henry Bensahel.

Letter / Email from Prof. Ivo Marik, Prague, Czech Republic, 2004

Dear Professor Tomasz Karski, dear friend, we are planning The 5th Prague-Sydney Symposium in October 13, 2004 and with Alena we will take part at the Paediatric and Biomechanical Congresses in Czech Republic. I go on (with my co-workers) with the region education courses “Deformities of the spine” for practical paediatricians (still Brno, Plzeň, Hradec Králové) where I will again mention the explanation of biomechanical influence onto the development of the so-called “idiopathic scoliosis” and its prevention and a method of treatment according to Karski (Lublin/Poland). Best greetings from Prague. Sincerely Yours, Ivo Mařík

Letter / Email from Dr Peter Tisovsky, 2005

“Dear Professor, for now, I am sending you copy of my study, which I made on 680 children with scolimeter, you can see how can be valuable using the quantification of Adams forward bending test, or [Karski] side bending test (increasing sensitivity and specificity of the tests), especially in reducing referral rate to orthopaedic examination, or reducing false positive cases, and therefore reducing unnecessary spine radiograph”. Best regards to you, your wife, all in your Department, dr Peter Tisovský (Slovakia, Bratislava)

Letter / Email from Prof. Georg Neff, Berlin, 2007

Dear Tomasz, many thanks for your Email, which now I can answer... The problem / Subject-I listened your lecture in Regensburg (2007) and I am surprising that nobody before you had to see and described the combination-stand position on right leg and scoliosis. It is question-as before by yours finding of the “abduction contracture of the right hip”-what was the first? Your answer-was proper to showing / directed to the “Seven Contracture” [Syndrome] described by my dear Chief Prof. Hans Mau... Georg and Sigi.

Letter / Email from Prof. Ian Stokes, 2008

“The 3rd etiopathological group (info-of scoliosis) is very interesting since it refers also to doctors of other specialist like internist, neurologist, gynecologist and may help in differential diagnosis of “back pain”. I hope that your work on hip contracture and scoliosis will be seen by those clinicians who take care of children with scoliosis and I hope that these insights will be helpful in identifying those at risk for progression. Ability to make a good prognosis of progression would evidently be a huge advance. With best wishes for the new year! Yours sincerely”, Ian Stokes, University of Vermont Department of Orthopaedics and Rehabil. Burlington, VT 05405-0084, USA. Phone: (+1) 802 656 2250 fax: (+1) 802 656 4247

Letter / Email from Prof. John Sevastik, Stockholm, 2008

“Dear Tomasz, Many thanks for your recent mail. It is always nice receiving news from old friends; not so many left nowadays. Your heart adventure did concern me but it seems that everything has turned out the right way. I really hope that you shall return to your scoliosis job with unbroken intensity. Physiological approaches to the scoliosis complexity is a necessity to compensate the increasing fanaticism with the extensive surgical interventions. Exchange of thoughts from time to time with Geoffrey Burwell on scoliosis matters of mutual interest is the only source giving some kick in life. Not to forget the support provided by the family in these old and difficult days. Again thank you dear Friend for not forgetting me. Best wishes to your wife, the Karski family and your grand daughter in particular. I have been lucky in life to see my first, soon one-year-old, great grand daughter. All best wishes”. John / Prof. John Sevastik-Stockholm / Solna / Sweden

Letter / Email from Prof. Martha Hawes sent to me in 30th May 2013

“Tomasz, Good to hear your voice! As usual, I agree with all your points. All those poor frustrated med techs, trying so hard to find new ways to make money on all those scoliosis patients while they watch and wait for surgery! Hope all’s well with you”. Prof. Martha Hawes, Arizona, USA.

Personal confirmation from Prof. Stefan Malawski, Warsaw and Otwock / Poland, 1995-2004

Prof. Malawski was the Head of Orthopedic Department in Otwock. He told me- “I fully confirm all about biomechanical factors in development of the so-called idiopathic scoliosis, about causes, explanation of classification, new therapy and causal prophylaxis”.

Personal confirmation from Prof. Ignacy Wośko, Lublin, 1995

Prof. Wośko was the Head of Pediatric Orthopedic and Rehabilitation Department of Medical University in Lublin, Poland in the years 1970-1995 [at this time I was an assistant to Prof. Wośko]. He told me: “I understand your conception about biomechanical factors in the development of the so-called idiopathic scoliosis. I fully confirm every point of your explanation about etiology, classification and therapy”.

Discussion

The biomechanical etiology answers all questions concerning the so-called idiopathic scoliosis. All what is described about this spine deformity in years 1995 till 2007 is confirmed in every day orthopedic practice. In many orthopedic and rehabilitations centers in Poland the new knowledge and new treatment of scoliosis were “step by step” introduced personally by general doctors, orthopedic surgeons, physiotherapists, but officially-by professors and directors / heads of departments is not recognized nor admitted. Over the years I see-that only scientists in USA, in Czech Republic are interested about the biomechanical etiology of scoliosis. In the years 2009-2020 I published in the USA 49 articles about scoliosis and 12 about SofCD and MBD, some articles in the Czech Republic, in Canada and in Spain. I hope the “new knowledge about scoliosis” will spread from USA to other countries in the world and the causal prophylaxis will be introduced to all patients in all countries.

Conclusions

1. In all the years of my observations (T. Karski, 1984-2020), the biomechanical etiology of the so-called idiopathic scoliosis was in every case-confirmed.
2. Development of scoliosis and the types of spine deformity are connected with pathological “model of the hip movements”- limited adduction of the right hip (T. Karski, 2006) and function- “standing ‘at ease’ on the right leg” and “walking”.
3. Restricted range of movements in the right hip is connected with the “Syndrome of Contractures and Deformities” according Prof. Hans Mau and Lublin observations.
4. Every type of scoliosis starts to develop at the age of 2-3.
5. There are three groups and four types of scoliosis:
 - A. “S” scoliosis 1st epg, 3D. Stiff spine. Some cases- lordoscoliosis. Causative influence: standing and gait.
 - B. (B1) “C” scoliosis 2nd / A epg, 1D. Causative influence: standing.
(B2) “S” scoliosis 2nd / B epg, 1D or 2D. Causative influence: standing, plus, -laxity of joints and/or incorrect exercises in previous therapy. Some cases- kiphoscoliosis.
 - C. “I” scoliosis 3rd epg, 2D or 3D. Clinically only stiffness of the spine. Causative influence: gait. The symptom of this deformity is: sport problems in young age and “spine pain” in adults.
6. The proper therapy for scoliosis-are only stretching exercises to receive full movements of the right hip, the proper position of the pelvis and full movement of the spine.
7. The causal prophylaxis of scoliosis is possible and should be introduced in every country.
8. The rules in prophylaxis-are-standing ‘at ease’ on the left leg, sitting relaxed, sleeping in the embryo position, active participation in a sport-especially beneficial are karate, taekwondo, aikido, kung fu, yoga and other similarly.

Acknowledgement

I would like to express my many thanks to David Poynton for the correction of the article.

References

1. Burwell G, Dangerfield PH, Lowe T, Margulies J (2000) Spine. Etiology of Adolescent Idiopathic Scoliosis: Current Trends and Relevance to New Treatment Approaches 14: 324.
2. Dangerfield PH, Dorgan JC, Scutt D, Gikas G, Taylor JF (1995) Stature in Adolescent Idiopathic Scoliosis (AIS) 1995: 210.
3. Green NE, Griffin PP (1982) Hip dysplasia associated with abduction contracture of the contralateral hip. J.B.J.S. 64: 1273-1281.
4. Gruca A, Tylman D (1995) Patomechanika bocznych skrzywień kręgosłupa, Wydawnictwo Severus, Warszawa 1995: 167.
5. Heikkilä E (1984) Congenital dislocation of the hip in Finland. An epidemiologic analysis of 1035 cases, Acta Orthop. Scandinavica 55: 125-129.
6. Hensinger RN (1979) Congenital dislocation of the hip. Clinical Symp 31: 270.
7. Howorth B (1977) The etiology of the congenital dislocation of the hip, Clin. Orthop 29: 164-179.
8. Malawski S (1994) Własne zasady leczenia skolioz niskostopniowych w świetle współczesnych poglądów na etiologię i patogenezę powstawania skolioz, Chir. Narz. Ruchu i Ortop. Pol. 3: 189-197.
9. Malawski Stefan -personal information.
10. Mau H (1979) Zur Ätiopathogenese von Skoliose, Hüftdysplasie und Schiefhals im Säuglingsalter. Zeitschrift f. 294 Orthop 5: 601-605.
11. Mau H (1982) Die Ätiopathogenese der Skoliose, Bücherei des Orthopäden, Band 33, Enke Verlag Stuttgart 1982: 1-296.
12. Mau Hans-personal information and letter (published in USA)
13. Hawes Martha-personal information and letters
14. Normelly H (1985) Asymmetric rib growth as an aetiological factor in idiopathic scoliosis in adolescent girls, 298 Stockholm 1985: 1-103.
15. Rapała K, Tylman D (1995) Patomechanika bocznych skrzywień kręgosłupa, Wydawnictwo Severus, Warszawa 1995: 167.
16. Stokes IAF (1999) Studies in Technology and Informatics, Research into Spinal Deformities 2, IOS Press 1999, Amsterdam, Berlin, Oxford, Tokyo, Washington DC, 59: 1-385.
17. Stokes Jan-personal information and letters
18. Sevastik J, Diab K (1997) Studies in Technology and Informatics, Research into Spinal Deformities 1, IOS 300 Press 1997, Amsterdam, Berlin, Oxford, Tokyo, Washington, DC 37: 1-509.
19. Sevastik John-personal information.
20. Tylman D (1995) Patomechanika bocznych skrzywień kręgosłupa, Wydawnictwo Severus, Warszawa 1995: 167.
21. T. Karski (1996) Kontraktüren und Wachstumstörungen im Hüft- und Beckenbereich in der Ätiologie der sogenannten "idiopathischen Skoliosen"-biomechanische Überlegungen, Orthopädische Praxis 3: 155-160
22. Karski T (2002) Etiology of the so-called "idiopathic scoliosis". Biomechanical explanation of spine deformity. Two 272 groups of development of scoliosis. New rehabilitation treatment. Possibility of prophylactics, Studies in 273 Technology and Informatics, Research into Spinal Deformities 91: 37-46.
23. Karski T, Kalakucki J, Karski J (2006) "Syndrome of contractures" (according to Mau) with the abduction contracture of the right hip as causative factor for development of the so-called idiopathic scoliosis. Stud Health Technol Inform 123: 34-39
24. Karski T (2010) Explanation of biomechanical etiology of the so-called idiopathic scoliosis (1995-2007). New 276 clinical and radiological classifications in "PoHYbove Ustroji" [Locomotor System] Czech Republic 17: 26-42.
25. Karski Tomasz (2010) Factores biomechanicos en la etiologia de las escoliosis dinominadas idiopaticas. Nueva 282 clasificacion. Nuevos test clinicos y nuevo tratamiento conservador y profilaxis", Cuestiones de Fisioterapia 39: 144-152.
26. Karski Tomasz (2010) Biomechanical Etiology of the So-called Idiopathic Scoliosis (1995-2007). New Classification: 285 Three Groups, Four Sub-types. Connection with "Syndrome of Contractures", Pan Arab J. Orth. Trauma 14: 69-79.
27. Karski T (2011) Biomechanical Etiology of the So-Called Idiopathic Scoliosis (1995-2007)-Connection with 279 "Syndrome of Contractures"- Fundamental Information for Pediatricians in Program of Early Prophylactics / Journal of US-China Medical Science, USA 8: 78.
28. Karski Tomasz (2013) Biomechanical Etiology of the So-called Idiopathic Scoliosis (1995-2007). Three Groups and 288 Four Types in the New Classification, Journal of Novel Physiotherapies, OMICS Publishing Group, USA S2: 6.
29. Karski Jacek, Tomasz Karski (2013) So-Called Idiopathic Scoliosis. Diagnosis. Tests Examples of Children Incorrect Treated. New Therapy by Stretching Exercises and Results, Journal of Novel Physiotherapies, OMICS Publishing Group 2013: 9

30. Karski Tomasz (2014) Biomechanical Aetiology of the So-Called Idiopathic Scoliosis. New Classification (1995-2007) in Connection with "Model of Hips Movements". Global Journal of Medical Research, Orthopedic and Musculoskeletal System 14: 12.
31. Karski Tomasz (2014) Biomechanical Etiology of the So-called Idiopathic Scoliosis (1995-2007)-Connection with "Syndrome of Contractures"-Fundamental Information for Pediatricians in Program of Early Prophylactics. Surgical Science 5: 33-38.
32. Karski Tomasz, Karski Jacek (2015) "Syndrome of Contractures and Deformities" according to Prof. Hans Mau as Primary Cause of Hip, Neck, Shank and Spine Deformities in Babies, Youth and Adults American Research Journal of Medicine and Surgery 1: 26-35.
33. Karski Tomasz, Jacek Karski (2015) Biomechanical etiology of the so-called Idiopathic Scoliosis (1995-2007). Causative role of "gait" and "permanent standing 'at ease' on the right leg". New classification. Principles of new therapy and causal prophylaxis. Canadian Open Medical Science & Medicine Journal 1: 1-16
34. Karski Jacek, Tomasz Karski, Jarosław Pyrc, Małgorzata Kulka (2016) Deformations of the feet, knees, hips, pelvis in children and adults with minimal brain dysfunction. causes. treatment. Prophylaxis. Locomotor System 23: 2
35. Karski Tomasz (2017) Physiotherapy- Correct, or Incorrect, Based on 'Wrong Principles of Treatment'. Example for Spine, Hip, Knee, Shank and Feet, Crimson Publishers 1: 1-6.
36. Karski Tomasz, Jacek Karski, Klaudia Karska, Katarzyna Karska, Honorata Menet (2018) Pediatric Prophylaxis Program of Motor System Deformations and Illnesses in Children. Problems of Spine, Hips, Knees and Feet, EC PAEDIATRICS 7: 704-714.
37. Karski Tomasz, Jacek Karski, Katarzyna Karska, Klaudia Karska, Honorata Menet (2018) Prophylactic Rules for Newborns, Babies, Children and Adults in problems of Hip, Knee, Shank, Feet and Spine, Online Journal CRIMSON PUBLISHERS 2: 110-112.
38. Karski Tomasz, Jacek Karski (2016) Bóle krzyża-problem neurologiczno-ortopedyczny. Objawy. Przyczyny. Leczenie. Back pain-neurology-orthopedic problems. Clinic, causes, therapy and prophylaxis. Postępy Neurologii Praktycznej, Wydawnictwo Czelej 4: 9-16
39. Karski Jacek, Karski Tomasz (2016) "Imperfect hips" As a Problem at an Older Age. Early and Late Prophylactic Management before Arthrosis. Jacobs Journal of Physiotherapy and Exercises 1: 7
40. Karski Tomasz (2018) Biomechanical Aetiology of the So-called Adolescent Idiopathic Scoliosis (AIS). Lublin Classification (1995-2007). Causative Influences Connected with "Gait" and "Standing 'at ease' on the Right Leg", Journal of Orthopaedics and Bone Research (USA), Scholarena 2018: 10.
41. Karski Tomasz (2019) Biomechanical Etiology of the So-Called Idiopathic Scoliosis. Connection with "Syndrome of Contractures and Deformities", Role of Gait and Standing 'At Ease' On the Right Leg in the Development of Spine Deformity. New Treatment. Causal Prophylactics, International Journal of Orthopaedics Research, OPAST 2: 1-5.
42. Karski Tomasz (2020) Biomechanical Factors in Etiology of the So-Called Idiopathic Scoliosis (Adolescent Idiopathic Scoliosis [AIS]). Dates of Discoveries. Classification. Rules of Therapy and Prophylaxis. International Journal of Orthopaedics Research, OPAST 3: 64-69.
43. www.ortopedia.karski.lublin.pl (from 2006).

Copyright: ©2020 Tomasz Karski. This is an open-access article distributed under the terms of the Creative Commons Attribution License, which permits unrestricted use, distribution, and reproduction in any medium, provided the original author and source are credited.