

# Voordelen Staand Werken

Robin Witteveen

## Strategische Partners:

Europese topmeubelfabrikanten  
Van den Dungen Projectmontage



# Missie

**Witteveen Projectinrichting vermarkt producten en diensten voor de complete ergonomische inrichting van een kantoor en/of project.**

**Witteveen is continu op zoek naar de ideale ergonomische werkplek voor beeldschermwerkers, zodat ze een gezonde, creatieve en productieve werkstijl ontwikkelen.**

**Advies, kwaliteit, service, lage overheadkosten, een scherpe prijsstelling, creativiteit en plezier in het werk staan bij ons bovenaan.**

# Producten

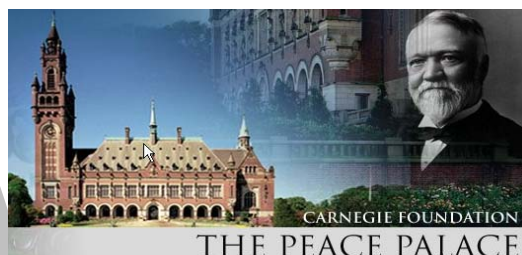
- Bureautafels en –stoelen
- Zit/sta tafels en zadelstoelen
- Wanden en akoestiekverbetering
- Ergonomische hulpmiddelen
- Kasten en ladeblokken
- Directiemeubilair
- Interieurbouw + balies
- Kapstokken + verlichting
- Stoffering en zonwering

# Klanten



Rabobank

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# Websites

- [www.project-inrichting.nl](http://www.project-inrichting.nl)
- [www.scheidingswand.net](http://www.scheidingswand.net)
- [www.ergo-burostoel.nl](http://www.ergo-burostoel.nl)
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- [www.de-ideale-werkplek.nl](http://www.de-ideale-werkplek.nl)
- [www.zadelstoel.nl](http://www.zadelstoel.nl)
- [www.surfstoel.nl](http://www.surfstoel.nl)
- [www.ergonomics.nl](http://www.ergonomics.nl)
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<i>Sterke punten van Witteveen:</i>	<i>Uw voordeel:</i>
1. We hebben veel kennis over de ergonomische werkplekinrichting, akoestiek en complete kantoorinrichting	1. U krijgt van ons een degelijk en doordacht advies wat leidt tot een goede oplossing
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4. We hebben een uitgebreide showroom waar onze producten goed gedemonstreerd worden	4. U kunt onze oplossingen goed bekijken en 'voelen' voordat u tot aankoop overgaat
5. Onze kostenstructuren zijn laag	5. U krijgt waar voor uw geld

# Voordelen staand werken

1. Gezonder voor beeldschermwerker (minder rugklachten)
2. Productiviteit stijgt (voorbeeld Toyota)
3. Kwaliteit stijgt (voorbeeld Alarmcentrale)
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5. Dynamiek stijgt (voorbeeld muzikanten)
6. Communicatie stijgt (voorbeeld feest/cafe)



## Staand werken verhoogd dynamiek en creativiteit





# Nadelen van klassiek zitten

1. Grotere belasting van rug
2. Spieren worden weinig gebruikt
3. Moeilijk ademen
4. Weinig bewegingsvrijheid
5. Beperking bloedsomloop
6. Blokkering genitalien
7. Grotere belasting heupen en knieën

# Nadelen van staand werken

<i>Nadelen staand werken:</i>	<i>Oplossingen:</i>
Hogere investeringskosten	Besparingen- en productiviteitsverbeteringen zijn groter
Gebruik stafunctie	Training inzet zadelstoel handverstelling
Bekabeling	Kabelmanagement

## Zit/sta Tafels – handverstelbaar

### Go2Move / Leuwico



Handverstelling, 62 - 128 cm  
Vanaf € 1.498,-

### Fleischer / Argo-T



Handverstelling, 68-120 cm  
Vanaf € 950,-

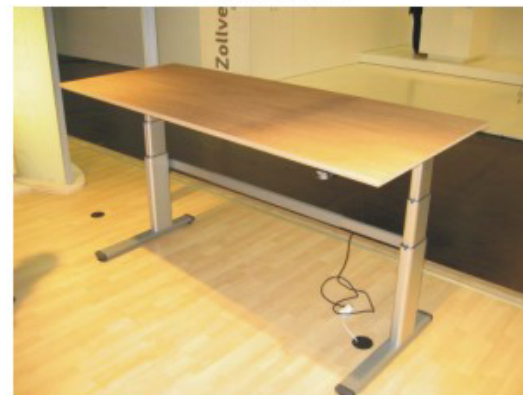
## Zit/sta Tafels – elektr verstelbaar

**Palmberg / Caldo**



Electromotorverstelling, 68 - 134 cm  
Vanaf € 1.430,-

**Poolster**



Electromotorverstelling, 66-131 cm  
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**Oriënt / Omann**



Electromotorverstelling, 64 - 128 cm  
Vanaf € 1.399,-

**Holmris / Milk**



Electromotorverstelling, 73 - 123 cm  
Vanaf € 2.237,-

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Zie [www.zadelstoel.nl](http://www.zadelstoel.nl) voor detailinfo

Adviesverkoopprijzen excl. B.T.W. (Prijspeil augustus 2008, prijswijzigingen voorbehouden)

## Score / Jumper



Nederland / vanaf €275,-

## Score / Amazone



Nederland / vanaf €275,-

## Alteq / Pony



Nederland / vanaf €251,-

## Salli / Classic



Finland / vanaf €409,-

## Salli / Twin



Finland / vanaf €409,-

## Salli / Multi-adjuster



Finland / vanaf €519,-

## HAG / Capisco 8105



Noorwegen / vanaf €310,-

## HAG/Capisco 8126



Noorwegen / vanaf €760,-

## Flexchair



Nederland / €920,-

# Collectie zadelstoelen en stahulpen Witteveen

Zie [www.zadelstoel.nl](http://www.zadelstoel.nl) voor detailinfo

Adviesverkoopprijzen excl. B.T.W. (Prijspeil augustus 2008, prijswijzigingen voorbehouden)

## Stokke / Move



Noorwegen / vanaf €307,56

## Freedom



USA / vanaf €260,-

## Aeris / Muvman



Duitsland / vanaf €301,68

## Comforto / Syst 1



Duitsland / vanaf €335,-

## Wilkhahn / Stitz



Duitsland / vanaf €372,-

## Score / Steady-S



Nederland / vanaf €278,-

## HAG / Balans



Noorwegen / vanaf €424,-

## Aeris / Swopper



Duitsland / vanaf €444,54

## Stokke / Variable



Noorwegen / vanaf €302,52

### Tevens in onze collectie:

buro's, zit/sta tafels, zadelstoelen, ergonomische hulpmiddelen, verlichting, directie- en call center meubilair, vergadertafels en stoelen, systeemwanden, home-officemeubilair, etc..

**[www.project-inrichting.nl](http://www.project-inrichting.nl), Ouderkerk a/d mooie Amstel**





## STAAND WERKEN in de klas

Derk Sauer, Parool Buitenland Mockba, zaterdag 8 oktober 2005



IK BRACHT m'n zoontje Berend (negen jaar) naar school en zag dat het klaslokaal helemaal was gereorganiseerd. In plaats van door de gebruikelijke bankjes werd de helft van het klaslokaal nu ingenomen door hoge tafels.

"Wat is hier aan de hand?" vroeg ik Berend.

"Oh," zei Berend, "we staan tegenwoordig in de klas."

"Staan!!??" zei ik. "Heb je straf of zo?"

"Nee hoor," lachte Berend. "Dat is iets nieuws. We wisselen af. Eerst zitten we tien minuten. Dan gaat een lamp branden en moeten we tien minuten staan, en daarna weer zitten."

"En de les?" vroeg ik, "gaat die gewoon door?"

"Natuurlijk papa," zei Berend, "doe niet zo stom."

De juffrouw, Natalya Alexandrovna, was er intussen bij komen staan.

"Vindt u de tafels niet mooi," zei ze, en wees op de nieuwe lessenaars. "Speciaal op maat gemaakt voor elk kind. Zo staan de kinderen keurig rechtop."

"Ik snap het niet helemaal," zei ik, "Berend beweert dat-ie tijdens de les tien minuten zit en daarna tien minuten staat. Klopt dat?"

"Zeker," zei de juf. "Dat is een nieuwe leermethode, waarmee we dit jaar voor het eerst experimenteren."

"En waar is dat zitten en staan goed voor?" vroeg ik.

"Dat is veel beter voor de rug, de benen en de voeten," zei de juf. "Zo'n hele dag zitten is eigenlijk heel slecht voor opgroeiende kinderen. Moet u maar eens opletten hoeveel jonge kinderen al een holle rug hebben. Vroeger schreef men veelal staand. Dat doen wij nu weer."

"Maar is dat niet vreselijk storend, om de tien minuten een hele volksverhuizing in de klas?" zei ik. "Zit je net in een rekensom, moet de hele boel verhuizen."

"Het was natuurlijk wel even wennen," erkende de juf. "Maar nu gaat het vrijwel automatisch. De les wordt nauwelijks onderbroken."

"Wie heeft dit eigenlijk bedacht?" vroeg ik aan Natalya Alexandrovna.

"Onderzoekers in Vladivostok," zei ze. "Die hebben ontdekt dat de gezondheid van kinderen met sprongen vooruit gaat als ze niet de hele dag zitten."

"Dat lijkt me buitengewoon lastig te meten," zei ik sceptisch.

"In veel Russische regio's wordt deze lesmethode anders al jaren gehanteerd," zei de juf, "alleen Moskou bleef achter. We zijn hier nogal conservatief ingesteld. Berends klas is de eerste in heel Moskou waar zo les wordt gegeven."

"Wat hebben die onderzoekers nog meer bedacht?" vroeg ik.

"Dat je eigenlijk op blote voeten moet lopen," zei Natalya, "maar dat gaat misschien een

beetje ver."

"Wat vind jij er eigenlijk zelf van? Zit of sta je liever?" vroeg ik aan Berend, die intussen zijn schoolboeken had uitgepakt.

"Wat dacht jij?! Jij gaat toch ook niet staand televisie kijken!"

**DERK SAUER**

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Terug



Terug

## Salli - New information about sitting

Sitting disorders (SD) are weakly recognized, but important factors in health/productivity. Even health care professionals are unsure as to what causes them. SD inflicts loco motor diseases, weakens the blood circulation and causes problems in the internal organs. As you sit you get tired and experience discomfort. It is unbelievable, but sitting has physiological effects of different ways to sit that can be seen on a person or extrapolated from basic physiology. Backaches are the most commonly known and the most expensive of all the SD ailments, but they are only a fraction of the approximately 30 sitting originated conditions listed so far.

### The most important effects of the traditional sitting position:

- Bad posture and rounded shoulders cause shoulder tensions
- Problems develop in disks and vertebrae, back muscles weaken
- Ligaments between vertebrae stretch, posture gets worse, muscles weaken
- Bad posture causes poor breathing and lack of oxygen, vitality decreases
- Moving around with the chair and reaching from it is clumsy, since the feet are on the way
- Small angles in the knees and hips weaken the in-joint metabolism
- When people sit in a poor posture the abdominal cavity and the intestines are pressed between the ribcage and the pelvis and the intestinal functions are disturbed
- The lymphatic flow in the pelvis and genital area is weak because of the hip angle and the pressure induced by sitting



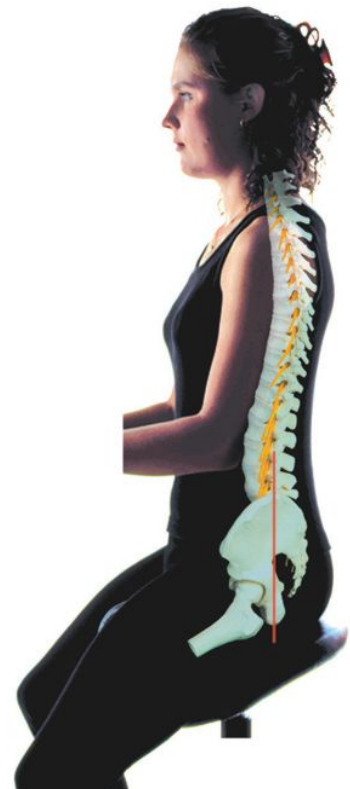
### The 90 degree hip angle doesn't work

The 90-degree angle in the hip is difficult to uphold. (Opening the thighs wide helps in maintaining the posture, but is uncomfortable for many women.) When the thighs are horizontal the hip tilts backwards and the back is rounded. Actively leaning on the backrest is difficult, and therefore people don't usually sit in this manner. In many of the traditional chairs the seat is tilted forwards. This small change in the thigh angle won't cure the lower back posture. One disadvantage of this change is also that the person sitting on the chair feels like he's sliding forwards, pants tighten up in the crotch and the pressure in the lower thigh increases.

### Sitting on the buttock and the lower thighs causes ailments

Sitting on the buttocks and lower thigh muscles causes pressure on tissues and blocks circulation. Everyone can experience this when sitting for a long time in the office, car, airplane etc. The muscles exposed to the pressure will soon start to feel worse. The impacts of this are:

- Fluid circulation in lower limbs is reduced, causing swelling, varicose veins, cellulite build up, "cold feet" and even clogs
- Metabolism in muscle decreases, weakening the functionality of the muscle
- The pressure on the muscles is uncomfortable and causes restlessness



- In order to avoid discomfort people cross their legs, lean over the table or lean back
- Decades of sitting on the buttocks makes them appear more flat and unaesthetic

### Other disadvantages of the traditional sitting position are:

1. Testicular temperature and the temperature of sperm can rise up to approx. 37 °C, which is 4 °C more than the physiological optimum temperature and can be a major cause of the decline of sperm quality in western countries
2. With men, the part of the penis behind the testis is pressed between the pubic bone and the chair. In order to avoid this pressure, men tend to sit always with their lower back tilted backwards
3. Generally, the height of a table is something between 72-74 cm (28.3-29.1 in). This is too low for even the shortest work standing up
4. The mechanisms needed for resting the back make the chairs expensive, big and heavy
5. In the case of customer service, traditional sitting works poorly, since the person sitting is positioned much lower than the customer
6. Continuous poor back posture easily causes problems in back vertebrae, which then produces referred pain in other parts of the body, also in the intestines. (Karppinen 2004)

A large part of the Finnish youth is growing up to be back chronics. According to Salminen (1994), already over 50% of the 16-year-olds had changes in their back structure, and now the situation is even worse. The quality of their life will decrease and their health care expenses will increase rapidly. Our society can't afford it and that's why improving the quality of sitting is important.

### Physiologically harmless sitting

Balanced sitting is based on the right (upright) position of the pelvis, which is supported by the ischial bones and not by the soft tissues. This will result in a good back posture and in the freedom of the limbs and the back. Long-term sitting is always harmful to the body. These harms can be minimized with a sitting, if it covers all the following prerequisites:

1. The upper body is free, posture is good and tension-free without supports (Brygger 1982)
2. Upper and lower limbs are free to move (working, moving the chair around and reaching)
3. The genitals are not under any pressure (not with women and especially not with men)
4. Sitting is supported only with bones, not with muscles (bones in the feet, pelvis and elbows)

The immobility involved in sitting work can be reduced by using a Bluetooth headset and by walking, hanging or stretching during phone conversations.

### The effects of the riding-like sitting

The angle between the thighs is approximately 90 degrees and the thighs are sloping downwards approximately 45 degrees. In a properly padded and shaped saddle chair the ischial bones (sit bones) carry the weight of the body instead of the muscles. Riding-like sitting position is much more healthier and comfortable because:

- The back becomes more active, muscles strengthen, the posture is improved
- Sciatic-type pains in the lower back diminish or disappear
- Tensions and pains in the shoulder muscles are reduced
- Fluid circulation is improved especially in the lower part of the body
- Breathing deepens, oxygen intake increases
- Moving around and reaching out is easy and safe
- Sitting down and getting up is effortless, fast and safer for the knees
- Higher desks required by the saddle chair also suit working while standing



- Strain on the knees and hip joints diminishes, metabolism is activated
- Sitting is possible in many jobs that have required standing before
- Attaching accessories to saddle chairs for special jobs is easy
- Chairs with divided seat prevent harmful pressure to the genitalia, improve the ventilation of the area and enable tilting the pelvis forwards in order to create good posture in the lower back

## Using the table in a new and more effective way to supplement the sitting

In addition to the feet and the pelvis, in a good sitting position the weight of the body should be divided also partly on the elbows. The most advantageous way of doing this is the deep socket on the table, which provides the elbows a support surface directly under the shoulders. It's important that the elbow support is correctly padded and near the body. Elbows support a notable part of the upper body's weight (a man weighing 80 kg the amount is 5-10 kg) since this will help in keeping the shoulders relaxed and rehabilitating the lower back. The height of the table should be easy to adjust for the optimal height. With a computer station the optimum heights of reading and writing differ many centimeters. The heights in the morning are different than the heights in the afternoon, since the spine shortens during the day. Standing is also a good alternative. In the optimum situation, the table has automatic adjustable settings for eight different heights.

## Applying the riding-like sitting correctly

Riding-like sitting can be applied everywhere from day-care centers to nursing homes, from schools to factories and from offices to concert halls. A common misconception is that the saddle chair can only be used part-time. The situation is completely opposite. Physiologically advantageous sitting position is always easier and healthier than the disadvantageous. The back doesn't need to be rested on the backrest since it won't strain, as is the case with the conventional slouching sitting position. The non-users don't always know this. Even long days of sitting are possible without strain if the saddle chair environment is properly designed. With saddle chairs, as with other furniture there are always better and poorer furniture. It's not easy for a non-expert to tell the difference between a high-quality chair and a cheaper version. The essential factors in the quality are the design of the seat which should not put extra pressure on the buttocks, inner thigh or genitalia. In this light the divided seat is quite necessary for men. Other quality thing is padding which must be flexible over 10 years and the upholstery material must be long lasting too, ventilating and strong like real leather. Metal is the most reliable for the base of the chair, plastic grows fragile in the long run. Large 65-75mm castors are easy rolling and reliable and strong on most floors unlike small but traditional 50mm castors.

## Economic effects of the riding-like position

Good riding-like position furniture costs the same amount as other high-quality furniture but they prevent ailments and increase the productivity of work tens of percents and add active working years. The overall investment including the tables is approximately €1500 and the daily cost less than two euros. Even the slightest increase in the productivity of work will surpass this in hundredfold. The reasons behind not using good furniture are not economical or rational, but (traditionally) prejudiced - the well-being of other people is not valued in spite of the flowery promises. In reality, organizations have a hard time finding a more profitable investment than changing the traditional and problematic work sitting into a riding-like sitting by implementing high-quality furniture into the work place.

## Challenges of the riding-like sitting method

If carried out properly, riding-like sitting is a revolution. It takes getting used to and the time needed varies individually. A narrow skirt without a split won't work. In addition, the traditional solid table height will not work with a saddle chair. If the table is not replaced with an electrically adjustable table with a socket and elbow padding, it should be raised for example, with extension pieces to match the exact right height for the individual using it. One problem is also the fact that sitting disorders are poorly recognized and the methods and benefits of riding-like sitting are not commonly known. Spreading the word on this advantageous method is slowed down by prejudice, lack of knowledge and the tough competition between

the producers of the traditional furniture and their sales contracts. Poor-quality knock-offs have been a disappointment for many consumers. The saddle-chair salesperson also has to be a good sitting consultant who helps the customers to optimize their sitting environment and gives advice and support in starting and getting used to the saddle chair.

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Managing Director, Sitting expert



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## Salli - Effects of high-quality saddle sitting on human physiology

This article deals with a weakly recognized sector of health: the sitting health. It is surprising how poorly the area is studied and how little attention it has been paid. This is noteworthy especially because of the high amount of Sitting Disorders (SD), caused by long lasting conventional sitting. Large majority of people are suffering at least from some SD every day. The exact impacts of sitting on metabolism are not at all well known. Studies on sitting and spinal health have been conducted, but none of them are connected with the pelvic area metabolism that is filled with all sorts of sensitive liquid circulation systems that are surely disturbed when we place the weight of our upper body on it. The most obvious reason for ignoring this field of study is inhibition. It may feel too “uncomfortable” to study tissues that are so close to the genitals, or genital and intestine metabolism during sitting.

Salli's research project has a goal: to raise interest and help launch studies on sitting health in all parts of the body. The hip is not the only area that has been neglected, but it is the most important together with the back. Both of them are very poorly studied.

Over 2/3 of the school children have changes in their back structure (poor posture etc.) already at the age of 16. Most of them are going to have chronic back pains. The problem has reached such magnitude and the trends are so alarming, that something ought to be done.

High quality saddle sitting (= an anatomically correctly designed seat with a gap in the middle of the chair) together with a height adjustable table and good elbow supports (= soft, on the sides, adjustable) seem to solve most of the problems. This combination seems to least disturb the metabolism and body functions compared to other furniture solutions and ergonomical concepts.

The following chapters list some of the changes which take place when ordinary people and typical SD patients are introduced to saddle chair sitting (free lumbar posture). These positive changes have been experienced by a large group of customers (more than 100.000), they are confirmed by scientific studies or based on knowledge of general physiology and sometimes even on common sense.

When people move from conventional seating to a saddle seat with a gap, the following things happen:

### Awareness of the Body

When people start improving their sitting radically, the effort alone brings about a change in them. People become more aware of their body and muscle tensions. New type of sitting makes people more conscious of their circulation, back health, posture, overall metabolism and sitting positions, and makes them want to improve their sitting environment.

### Spinal and Back Health

Sitting on a saddle seat allows the lumbar vertebrae to place correctly. This helps with disc problems and lower back pains. Correct angle between the vertebrae makes the facets support the next vertebra and carry approx. 30 per cent of the spinal weight. Muscles begin to strengthen due to the correct use of the back. Moving around with the chair and reaching for items becomes easier and risk-free because of the good lower back posture, firm foot support and proper use of the lower back muscles. The correct use of back muscles leads to a gradual improvement in posture and painless life for people with scoliosis.

Tensions in the shoulder-neck area are relieved because of better positioning of the thoracic and cervical spine and better posture of the shoulders. Shoulders and the neck rest freely. Soft elbow supports close to the sides of the body add to the effect.

In addition, the neck area tensions are also decreased. Sound formation in the throat improves as the tension in the sound forming organs is relieved. Circulation of blood to the head improves, reducing the frequency of headaches.

Increased relaxation in the neck-shoulder area also helps in getting rid of the mouse-hand nerve symptoms. Poor wrist angle, repetitious movement and muscle tensions, together with a nerve pinch in the kyphotic shoulder area, are the main causes of the mouse-hand nerve problems.

## Blood Circulation

The sensitivity of the circulation can be tested by closing a vein on the back of the hand by pressing it with a finger. Almost no pressure is needed. Imagine how dramatically the circulation is disturbed when we place our upper body weight on our soft tissues and sit almost motionless against a back rest...

Saddle sitting improves the circulation of blood and the operation of the lymphatic system. The impact is strongest in the typical pressure areas (when using a conventional chair) – the hips, the thigh muscles and the back. In addition, the circulation also improves in the typical tension areas like the upper back. Lower extremities benefit as a result of the wider angles in the hips and in the knees. The performance of the muscles is improved due to easier usage. The ischial bones carry most of the body weight and the pressure to the muscles in the pelvic and thigh area is reduced. In addition, deeper breathing (see later) has a positive impact on circulation.

## Increased Mobility, an Alternative to Standing

Traditionally, many jobs involve standing, especially in the field of customer service. With a saddle chair standing is no longer necessary; working on saddle chair is a great alternative to standing. The employee is approximately on the same height as the customer. Less strain on the lower back and the increased circulation in the lower extremities help the employee to stay in a good mood and maintain a high quality of customer service. By using a saddle chair equipped with wheels, the employee is able to move effortlessly from one place to another with just a small push from the legs, freely positioned on both sides.

## Genitalia

Roughly 50 per cent of the adult population in Europe suffers from some kind of physical sexual disorder at least periodically. One of the main reasons for this is sitting and its harmful effect on circulation.

When it comes to men, the problem of seat design is clearly visible in all workplaces. Men tend to sit with their pelvis tilted back. This is an unconscious way of relieving the pressure on the root of penis. Men keep their thighs spread in order to eliminate the feeling pressure to their testicles. In addition, tight clothing can also cause pressure to the man's genitalia, which is very sensitive to the effects of pressure and should not be subjected to it for longer periods.

Saddle chair with a gap in the middle cools down the testicles to their optimum temperature of 33 C° (approx. 91 F°). In conventional sitting conditions the temperature of the testicles can often rise to 37 C° (approx. 99 F°). This could also be the reason behind the general decrease in genital health and the reduced quality of sperm.

When using a high-quality saddle chair, the lower part of the penis (approx. 10 cm in length from the pubic bone under the hip and behind the testicles) does not get pressured the way it does with bad saddle chairs and common chairs. As a result, less harmful pressure is applied on the veins in the genitalia and especially on the pudendal nerve. The pressure to the pudendal nerve is a known cause of impotence on bicyclists and the same phenomenon has also started to occur with men using a one-part-seat saddle chairs. A fair amount of pressure is also concentrated on the pudendal nerve when a man is sitting with his hip straight up. In this case the lower back is in a better position, but the pressure on the pudendal nerve increases. Any man can test this by sitting down very slowly on a softly padded chair and feeling the effects of the pressure on the tissues.

Modern clothing and lots of sitting combined with the use of pantliners and sanitary pads increase the risk of infections in women's genitalia. Sitting on a saddle chair with a gap decreases this risk. Most women find inadequate gap or a saddle seat without a gap uncomfortable around the pubic bone area. The feeling

is mainly a result of the pressure on the pudendal nerve and can also be caused by the pressure induced on the pubic bone by the seat. Of course, such pressure leads to decreased circulation is thus also a health hazard. Decreased circulation (resulting from position, pressure, and thigh angle) causes temperature in the pelvic floor tissues to decline. It is generally known that prostate infections are very common and caused at least partly by the cooling down of the prostate gland.

With both men and women a gap in the chair encourages the hip to tilt forward without the uncomfortable pressure against the pubic bone and the genitals. This helps to keep the lumbar posture in a natural lordosis (= the ideal form of the spine). With women, the uncomfortable feeling in their genitals comes especially from the pressure on the pudendal nerve when it gets trapped between the pubic bone and the chair.

A saddle chair with a gap in the middle effectively relieves the pressure to the genital area and maintains safe angles between the thighs and the upper body.

## Knee and Hip Joints

With a saddle chair, the angles in the hips and the knees are about 135 degrees. This wider angle improves the metabolism in the joints and decreases the risk of joint ailments. Constant 90 degree angle (when sitting on a conventional chair) is known to increase the risk of arthritis in the knee and hip joints.

## Nerve Functions

With men, the nerve functions improve especially in the genital area (as opposed to using a saddle chair without a gap), in the hip and lower back areas and also in the lower extremities. These areas are the main targets of the sitting pressure that bother the nerve functions. With a chronically poor posture, many nerve dysfunctions seem to appear all over the back in addition with vertebra problems.

## Oxygen Intake

Using a high-quality saddle chair will increase the oxygen intake considerably. Stiffness in the chest bone and ribs and the upper spine area decreases. This, combined with reduced muscle tensions and better posture, will make the whole breathing mechanism work better and allow the chest structure expand fluently, thus helping the breathing to become deeper. Increased oxygen intake will increase the oxygen in the whole body and slow down the process of getting tired.

## Pelvic Floor Muscles

Pelvic floor muscles do not like the pumping movement of the horse back riding, but they do like sitting on a saddle chair. Bending and the use of lower back and pelvic muscles have a positive impact on the general muscle strength of the body. Sitting with less pressure on the soft tissues and increased use of muscles activate the metabolic functions in the pelvic floor area.

## Shoulder Joint

Shoulder joint problems are common in professions where the angle between the upper body and the upper arm is more than 30 degrees, for example in dentistry. When using a saddle chair, the angle usually stays smaller than 30 degrees and with a good spinal posture helps to prevent the shoulder joint problem from developing.

## Spinal Health and Internal Organs

In traditional Chinese medicine, as well as in traditional Scandinavian folk's medicine, spinal vertebrae, their health and balance are known to have a connection with certain organs and their functions. For example, common problems with L4 and L5 have a connection with the hip, the knee and the blood

circulation of the lower extremities, urinary problems and sciatic pain. The problems in other vertebrae also have connections to many other internal organs.

## **Stomach and Intestines**

As the upper body posture improves, the pressure to the stomach, small intestine and colon decreases and the stomach is no longer pressed between the hip and the chest. This has a positive effect on the bowel movements (peristalsis and its efficiency) and digestion.

A saddle chair with a high middle part without the gap can also press the anus and the rectum indirectly, causing slowing down or postponing of the evacuation reflex.

## **Beauty**

It is justifiable to say that the looks of a person improve (together with better health) with the correct use of a saddle chair. Improved circulation in lower extremities is also expected to decrease swelling, development of cellulite and varicose veins. In addition, the improvement in the posture makes the upper body look better as the shoulders are straight and the neck and the head held up. Good shoulder position also improves the aesthetics of the female breasts. After sitting for many years, and as we age, the buttocks can become flat and lose their healthy, strong and sexy looks. A saddle chair can help to reduce these effects.



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