



**AN INTRODUCTION**

**TO**

**CHIROPRACTIC  
SPINAL BIO-MECHANICS/BIO-PHYSICS**

*"An Individual and Family Health Care Center"*



1847 - 1931



**he doctor of the future  
will give no medicine  
but will interest his patients  
in the care of the human frame,  
in diet, and in the cause and  
prevention of disease.**

*Thomas A. Edison*

## **AN INTRODUCTION TO CHIROPRACTIC SPINAL BIO-MECHANICS/BIO-PHYSICS**

This booklet contains a brief description and explanation of the advanced procedures encompassing spinal bio-mechanics/bio-physics. We offer this information in order that you may understand how your goal of good health is achieved by the Chiropractic techniques which are used in this office.

As a matter of further explanation, it should be understood that the majority of Doctors of Chiropractic use general techniques (full spine manipulation and physiotherapy), while a small minority use techniques which employ upper neck adjustments only, and a minority of this minority employ the precision procedures which are used in this office, including precise mathematical x-ray analysis and other computations, specific spinal exercises/maneuvers, the use of spinal exercise support fulcrums and spinal blocking/moulding procedures, cervical and lumbar circular traction, and of course the precision cervical instrument adjustment.

These procedures are based on mathematically exact formulas. All spinal corrections which are done in this office are based on these formulas which have been developed through many years of scientific postulation and clinical trial.

### **The Leg Check**

One of the ways we determine whether or not the patient needs Chiropractic care, is by a check of the body balance referred to as 'leg check'. A neurological disturbance in the cervical (neck) area produces a distortion along the entire spinal column and results in a leg differential. The height of the table on which the patient relaxes and the manner in which the doctor positions him/herself have been mathematically determined, and the ability to make an accurate leg check involves training, practice, and experience. This check does not determine what is wrong; it is not the cause of the problem, but only the observable result of the problem.

### **The Motion Form/Postural Analysis**

The doctor's visual examination of how you carry your head on your neck, and if one shoulder or hip is higher or more rotated than the other, are just some of the body signals that aid your doctor in the monitoring of your condition.

## **Taking The X-Rays**

In order to tell what is wrong, it is necessary to x-ray the spinal structures, because the condition which may be causing the problem is usually too small to be seen or felt from the surface. (This condition is called a Vertebral Subluxation.)

The x-ray equipment has been aligned with the utmost accuracy in order to reduce to a minimum the amount of distortion the equipment will produce on the x-ray. We get bilateral magnification instead of distortion, which allows us to transfer measurements from one x-ray to another, and then to you, the patient.

A *minimum* of three x-rays of the neck and upper back, and two of the lower back are usually necessary. These views give us a 3-dimensional view of the patient, which is necessary in order to make a complete analysis of the vertebral subluxation complex. Precise placement of the patient is very important during this phase of our work, however the patient is never subjected to high power or unnecessary x-rays.

## **Analyzing The X-Rays**

Special instruments are used to analyze the x-ray shadowgraphs; these instruments make it possible to measure the position of the spinal bones to within  $\frac{1}{4}$  of a degree. During the analysis, many lines must be constructed upon the bone shadow images, forming many angles which must be measured from a mutually perpendicular origin.

## **Calculating The Adjustment**

The measurements from the x-ray analysis are then placed into formulas, which give the exact direction from which a corrective force must come, in order to adjust the position of the spinal vertebrae so that the subluxation is reduced. The *human variable* of each patient is taken into consideration, allowing a correction of ALL the vertebrae involved with a minimal amount of force, by utilizing the mathematical formulas previously mentioned.

## **The Precision Instrument Adjustment**

The placement of the patient is very important. The x-ray analysis indicates where the adjustment(s) must be made and the angle(s) which are involved. The x-rays also show how the patient must be purposely and precisely positioned in order to overcome the resistance factor of the subluxation complex, necessary in achieving the maximum amount of spinal correction. The adjustment itself is barely felt by the patient because it is short in travel. Here again, the precision which was involved in the previous steps make it possible for the correction to be made with a very slight amount of force. If the angles are calculated and the adjustment is delivered properly, the vertebrae will move very easily.

## **The Specific Hand Adjustment**

The Chiropractor will first prepare for the cervical instrument adjustment with complementary adjustments by hand, at various spinal levels as needed. These are fluid, split-second, low-force, specific vector adjustments, and will aid in the permanency of the cervical adjustment, plus allowing the quickest correction of the spine in the shortest amount of time possible. It may take days, weeks, months or even sometimes years of hand adjustment corrections, before it's time for your body to properly accept the upper cervical instrument adjustment.

## **The Specific Spinal Exercises/Maneuvers**

Each patient is instructed in specific exercises for the spine. The exercises are also a form of correction, and will aid the patient in their own spinal rehabilitation. The exercises, when properly done, will allow the patient to enhance and maintain the spinal corrections brought about by the chiropractic adjustment. They also allow the patient to rehabilitate the soft tissue in and around the spine, to re-establish purposeful range of motion to the discs and ligaments, and to enhance the normal metabolic chemical exchanges in these tissues. The patient is expected to cooperate fully with the exercise program in order to bring about maximum correction.

## **The Use of Circular Traction and Wedge Blocking**

These procedures utilize Impulse Forces ( $\text{Force} \times \text{Time}$ ) in order to achieve more subtle correction, especially to the lateral spinal curves as viewed from the side. These impulse forces are very effective, and are similar to the orthodontist's use of rubber bands on braces, when correcting crooked teeth.

## INTERFERENCE WITH LIFE

### Only One Healer

There is only one healer. It is not a pill, potion or shot. It is not surgery; this only makes you incomplete. It is not any doctor of any kind. It is your body itself and its intelligence within. The body knows how to mend fractures, heal cuts and cure ulcers. The body knows how to take care of itself, if it is allowed to do so.

### Nature Knows

Nature knows what to do, unless it's interfered with. This is what Chiropractic does — **removes interference**. If the nerve conducts **life** from the brain to the cell, and it does, and this conduction is interfered with by nerve pressure from the bones in the spine getting out of line, **life** will be withheld from that part of the body. Example: Cut the nerve to your tooth, and it will get black and die. Cut the nerve to your finger, and it won't function, for it will die. From this example, you must see that nerves conduct **life**, and if interfered with by the spinal bones, the tissue will die, or become dis-eased. Thus your symptoms are warnings, and pain is a signal for you to heed — there may be interference with the nerves from the brain to the body, and to get well the interference must be corrected — so that the intelligence within the body can take over and heal the tissues from within.

### The Principle Of LIFE

The principle of **life** is within us all. That principle or power that made the body in nine short months, didn't jump out of the body at birth. No — it remained with you and only needs the interference removed for it to repair, replace and create new tissue, with the same vigor and intelligence it had when it made you.

## **You Should Know**

You should know that the first organs created are the brain and spinal cord; and from the **life** coming from the brain, down the spinal cord, out the nerves to every cell in the body, the **life** flow remains, to create and repair new tissue, **unless** the **life** flow is interfered with by pressure on the nerves in the spinal column.

## **Health Is Not A Gift**

Doctors of Chiropractic believe we all deserve good health. Doctors of Chiropractic also believe one cannot either buy or sell health. It must be earned and maintained constantly! Chiropractic can help to remove the interference to **life** flow, and correct it, or improve it — that is our service to you. You must *decide* to maintain that newly released **life** energy, with spinal exercises and periodic or regularly scheduled chiropractic adjustments as recommended by your doctor.

## **The Adjustment**

The actual 'adjustment' you receive on each visit takes less than a few minutes. It is given quickly, and with precise accuracy and timing, as indicated by the x-ray findings, palpation and other tests. **The corrective process** takes place **after** the adjustment is made; for example, changes may start taking place in the mid back and low back after a neck adjustment has been made, and vice versa.

Neck adjustments are by far the most important; spinal cord pressure caused by upper neck misalignments can rob any organ or part of your body of proper life flow from the brain. Spinal adjustments being made at this point could affect a dis-ease process in any part of the body.

## GENERAL

Since this office is a busy one . . . **please be patient if we are behind schedule** . . . if you must go to work or have another appointment . . . let us know and we'll try to accommodate you. If you have to wait when you come in the office, remember you will receive the same attention as those before you.

When you have a question about your case, please ask us . . . as you understand how Chiropractic works . . . you'll begin to see how logical the science of Chiropractic really is . . . if you have a **special problem**, we'll gladly make special arrangements for consultation. Many domestic, behavior, and emotional problems must be handled unhurriedly . . . without interruption . . . and we'll gladly arrange this time for you.

Last of all, remember to cooperate with your doctor at all times, and follow the recommendations carefully. We find that very few fail to obtain good results when they cooperate fully with their doctor. Remember, Chiropractic is nature's way of healing, so have patience and you will be satisfied with what you receive.

## QUESTIONS

Q. ***What is Spinal Bio-Mechanics/Bio-Physics?***

A. It is a method of spinal correction which uses precise measurements to determine which vertebrae you should have adjusted, when you should be adjusted, where you should be adjusted, and controls precisely how you are to be adjusted; and also encompasses the utilization of an adjusting instrument to make more specific spinal corrections. It is a very scientific chiropractic approach.



- Q. ***Why is an instrument used to make some adjustments?***  
A. When a vertebra moves out of its proper position, all of the vertebrae follow a definite path of direction. By the use of precision x-ray techniques, that path can be plotted. The adjusting instrument is then set at the proper angle and moved to the proper contact point. In this way an exact correction can be made. Because the adjustment has been calculated so carefully, a maximum correction can be made with a very small amount of force.
- Q. ***How does a misaligned vertebra cause illness?***  
A. A misaligned vertebra causes a neurological disturbance. Nerves are the pathways by which the brain and central nervous system control all function. When a neurological disturbance occurs there is a disruption in the communication system of the body. One or more parts of the system begin to function incorrectly, because they are not under proper control of the nervous system. Health begins to fail. Pain is sometimes one of the first signals that this is taking place.
- Q. ***How does the correction of a misaligned vertebra restore health?***  
A. When a vertebra is adjusted to or toward its proper position, the neurological disturbance is removed and nerve pathways begin to function properly. This allows the body to repair any damaged areas.
- Q. ***What causes a vertebra to misalign?***  
A. *Physical, chemical and emotional stress*, including trauma such as falls, jolts, jars, turns, twists, **auto accidents, work injuries**, organic disturbances, emotional strain, etc.
- Q. ***Does everyone get well under this type of Chiropractic care?***  
A. No. There is no guarantee that a patient will get well. However, we only accept those cases in which we feel that there is an excellent chance of recovery.

Q. ***How long does it take to get well?***

A. How quickly your problem responds to our Chiropractic care depends on several factors, such as your age, length of time you've had the problem, degree or number of spinal disorders which are pinching nerves and shutting off **life** to different parts of your body, cooperation in keeping appointments, desire to follow instructions, occupation, etc. These factors vary with each patient. . . consequently, two people with the same disorder do not get well in the same length of time. **This is why we are unable to predict the exact number of adjustments or length or time needed to get you well.**

Q. ***When should an adjustment be made?***

A. A precisely applied leg check or body balance check is the best way of determining *when* an adjustment is necessary. When a vertebra is out of its proper position, it causes a contraction of various spinal muscles, and one hip draws up slightly, causing a leg differential. If the body balance is checked carefully, this can be detected.

Q. ***Can a patient prevent the return of his or her condition?***

A. Yes — when your vertebrae go out of their normal position for any length of time, muscles and ligaments will adapt to this abnormal position, thus you have one group of muscles and ligaments on one side that are of normal strength and tone, and one group on the other side of the vertebral column that are weak. We can put the vertebrae back toward their normal position, but you must do your job by doing your specific exercises. These are prescribed so that you can maintain your health care. Do them faithfully, as they definitely have their part in your health restoration.

## SUGGESTIONS

1. Check your sleeping habits; your body does most of its housekeeping while you are at rest. Sleep on your side or back — **Never** sleep on your stomach!
2. Do not turn or bend your head rapidly or to extremes. Do not work with your arms over your head for extended periods of time, if it can be avoided. Be neck conscious!
3. It is a good idea to have someone drive you home after an upper cervical instrument adjustment. When you get home, lie down on your spinal supports and rest for an hour or so if at all possible.
4. When turning in your bed, use your shoulders and elbows for support. Do *not* pivot on your head and neck.
5. Symptoms may recur as the body repairs damaged tissue cells. If you are in doubt about your progress, call for an appointment right away, even though you may have an appointment at a later date.

Our work is based on the fact that the nervous system controls all bodily functions. Every tissue cell in the body must receive its proper nerve supply. A blockage or interference with the nerve energy results in illness.

We will do everything in our power to help you regain and maintain your health.

### ***What's the difference between regular Chiropractic and this approach?***

This booklet has been written in order to demonstrate that precision and specificity makes a difference. For, like hitting a golf ball, shooting a rifle, or putting a man on the moon, **the degree of success depends on the degree of accuracy.**

Our procedure is *different* from all other forms of Chiropractic and it is also *different* from any form of medicine.

We hope that you now have a better understanding of Chiropractic Spinal Bio-Mechanics/Bio-Physics, and that this understanding will help you to acquire and maintain good health.

## **OFFICE RULES**

You have been examined and x-rayed by this office to determine whether or not you can be accepted as a patient.

**We take only those cases which we feel can be helped.** If you are accepted, it is because in our judgement you have an excellent chance of recovery under our care.

When we accept a person as a patient, we are accepting the responsibility of restoring them to health. Please understand this and cooperate to the best of your ability.

On your next visit, we will recommend the length of time you should remain under close surveillance, and of the frequency of the office visits which your case requires. **We would much rather that you do not begin our services until you have definitely decided to follow our recommendations.**

## RULES

1. Chiropractic Spinal Bio-Mechanics/Bio-Physics is different from both Medicine and other forms of Chiropractic in its approach to health problems. Learn all you can about this science — it is totally scientific and very exact. Our practice is conducted on a strictly referral basis. **We will be happy to answer any of your questions, so that you can help us help others!**
2. After an adjustment has been made, most patients feel better within days, hours, or even minutes. However, the road back to health is not always completely free of obstacles. Damaged tissue cells and organs cannot be revived overnight, and the work of healing and *repairing may be accompanied by some pain and discomfort*. We do not work miracles — we work with natural laws. *Time is an essential element to the healing process.*
3. No drugs or surgical methods are used in our office. Be very guarded about taking drugs or medication. Please ask our advice. Most drugs either excite or numb the nervous system and cause side effects which retard health restoration. Surgery and Medicine have their place. Chiropractic has a different approach. Give your body an opportunity to get well.
4. Rule number four is the **golden rule**. As your health improves, tell others about your good results, especially your sick friends. If, through your influence, your family and friends decide to obtain Chiropractic care for their health problems, you will have done them a valuable service.

5. Use sound logic when you become ill! Use the **least traumatic** method of healing first!

**CHIROPRACTIC — FIRST  
DRUGS — SECOND  
SURGERY — LAST!**

The average patient soon finds out that regular Chiropractic care is valuable in regaining optimum health. Frequently, patients find that **they can** tell when an adjustment is needed. They also become anxious for their families to receive the same preventative care. . . and there are many families in our office benefiting from regular Chiropractic care. These families have **practically eliminated other medical expenses**. A two-year old with a fever of 104 receives an adjustment rather than penicillin and is normal the next morning; the teenager gets tonsillitis and recovers in a few days without antibiotics; the wife feels good even during her 'monthly' period and no longer needs her nerve pills, tranquilizers, or headache pills. . . all because Dad was the first to come into our office due to an aching back. Yes, you'll find, after beginning your care, that you will meet many friendly people in our waiting room who are here for a variety of conditions, and all are quite satisfied with what they are receiving.

It is our goal to render the finest Chiropractic care, and our office policy is to accept as new patients only those persons referred directly to us by you, a patient-friend. Therefore, *when you are recommending us to your friends, please ask them to mention your name when calling.*

We will continue to accept only those cases we believe we can help, and we will do our very best for you and your friends.

**“Look well to the spine  
for the cause of disease.”**

**Hippocrates**

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The following space is provided to you for any questions that you may have. Just write them down below and bring this book in with you on your next visit.

## THE TRUTH

We Chiropractors work with the subtle substance of the soul. We release the prisoned impulse, the tiny rivulet of force, that emanates from the mind and flows over the nerves to the cells, and stirs them into life. We deal with the magic power that transforms common food into living, loving, thinking clay, that robes the earth with beauty, and hues and scents the flowers with the glory of the air.

In the dim, dark, distant long ago, when the sun first bowed to the morning star, this power spoke and there was life; it quickened the slime of the sea and the dust of the earth, and drove the cell to union with its fellows in countless forms. Through aeons of time it finned the fish and winged the bird and fanged the beast. Endlessly it worked, evolving its form until it produced the crowning glory of them all. With tireless energy it blows the bubble of each individual life and then silently, relentlessly dissolves the form, and absorbs the spirit into itself again.

And yet you ask, "Can Chiropractic cure appendicitis or the flu?" Have you more faith in a knife or a spoonful of medicine than in the power that animates the living world?

By B.J. Palmer, D.C., Ph.C.