A JOURNEY TO LEARN ABOUT PAIN
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HOW TO USE THIS BOOK

YOU ARE MOST LIKELY A PARENT OR CAREGIVER, FAMILY MEMBER, OR FRIEND, WHO IS INTERESTED IN THIS BOOK BECAUSE A CHILD YOU CARE ABOUT, HAS PAIN.

THIS BOOK WILL COVER SOME TOPICS ABOUT PAIN AND PROVIDE SOME COGNITIVE AND BEHAVIORAL STRATEGIES FOR HELPING THE CHILD IN YOUR LIFE WHO IS STRUGGLING WITH PAIN.

THE CONTENT IS ALSO RELEVANT TO A WIDE RANGE OF PRACTICE, BY DOCTORS, PHYSIOTHERAPISTS, PSYCHOLOGISTS AND MENTAL HEALTH PROFESSIONALS WORKING WITHIN INTERDISCIPLINARY PAIN PROGRAMS.

THE BOOK WILL HELP YOU TO UNDERSTAND PAIN BUT IT DOES NOT AIM TO SUBSTITUTE ANY TREATMENT OR HEALTH PROFESSIONAL.
Clara is a very smart girl who loves to learn new things. Fred is her best friend.

Fred is an 8-year-old boy with headaches that occur most days of the week. Because of his pain, he has missed days of school this year and is no longer able to play soccer. His parents have taken him to see a number of specialists and he has tried many different medications, but he has not experienced any improvement in his pain.

Prof. Dexter is a very smart scientist. He can explain a lot of things. He works in a big laboratory with Henry, his super computer.

Dona Anna is Fred’s mother. She is worried about Fred’s pain. She is doing everything to help Fred.

Don is Fred’s little dog.
Clara and Fred are great friends who live in the same neighborhood.

Clara, Fred and Don like to do a lot of things together, and today will not be any different.

Fred!

Today is Sunday and Fred is at home. Fred has a headache again.
MOM. PLEASE, COME TO THE LIVING ROOM.

WHAT IS GOING ON FRED?

ARE YOU PLAYING A VIDEOGAME AGAIN? YOU SHOULD BE STUDYING FOR TOMORROW'S TEST.

MOM, I HAVE A BAD HEADACHE. I CAN'T GO TO SCHOOL TOMORROW.

WE ALREADY WENT TO THE HOSPITAL AND MANY DOCTORS TOLD US THAT THERE IS NOTHING WRONG.
BUT IT HURTS, MOM.

I KNOW IT HURTS, BUT YOU CANNOT MISS MORE CLASSES.

HOW ABOUT TAKING A SHORT WALK SOMEWHERE?

FRED!

FRED!

LOOK WHO IS HERE?

POOF! POOF! POOF!

GO FOR A WALK WITH CLARA TO DISTRACT YOURSELF FOR A SHORT TIME AND THEN GO BACK TO STUDYING.
WHAT KIND OF FACE IS THAT?

OH CLARA, I HAVE A HEADACHE AGAIN. TOMORROW I STILL HAVE THAT TEST IN SCHOOL.

DOES YOUR HEAD NOT HURT WHEN YOU PLAY VIDEOGAMES?

AT LEAST I DO NOT REMEMBER THE PAIN WHEN I AM PLAYING VIDEOGAMES.

I HAVE AN IDEA.

HOW ABOUT WE GO TO PROFESSOR DEXTER'S HOUSE? MAYBE HE KNOWS SOMETHING ABOUT PAIN.

WHAT A GOOD IDEA, CLARA!

LET'S GO.
PROFESSOR, FRED HAS BEEN HAVING HEADACHES VERY OFTEN. CAN YOU EXPLAIN TO US HOW OUR BODY FEELS PAIN?

WITH GREAT PLEASURE, KIDS.

LET'S SEE - I HAVE THAT INFORMATION IN MY SUPERCOMPUTER, HENRY.
Hello, Henry. Let's explain pain to our little friends.
LET ME TYPE WHAT YOU WANT TO KNOW INTO THE COMPUTER.

ARE YOU READY FOR A JOURNEY TO LEARN ABOUT PAIN?

YEEEEES!!!

LET US START!

THROUGHOUT OUR BODY, THERE ARE SMALL SENSORS SCATTERED EVERYWHERE.

THESE SENSORS SEND INFORMATION TO OUR BRAIN ALL OF THE TIME.
When we touch something hot or cold, or when we have a tight shoe that is pressing on our foot, the sensors send many messages.

\[ \text{COLD!!!} \]

These messages travel by wire through our body, called nerves, to the spinal cord (in our spine) and then to the brain.

\[ \text{ATTENTION!!! TIGHT SHOE!!} \]

The nerves connect all parts of the body to the medulla and brain. Nerves carry messages from the body to the brain and from the brain to various parts of the body.

\[ \text{BRAIN} \]

Do you know that nerves are made up of neurons?

\[ \text{WHAT ARE NEURONS?} \]

Neurons are very small cells, which we can see only with a microscope.

\[ \text{HI!!} \]

Neurons form the nerves and the brain.
In the brain we have many neurons that help us to see, hear, remember things and feel.

They are like the electric wires that carry electricity to our house.

It looks like if the electric wires of the street were the nerves bringing energy to our home, which is the brain.

And how do nerves connect all parts of the body to the brain, professor?

Pain is important to our body.

I do not like to feel pain, professor.

Easy Fred, he will explain.
HAHAHA. I KNOW, FRED. BUT LET US UNDERSTAND WHY IT IS SO IMPORTANT THAT WE ARE ABLE TO FEEL PAIN.

LET ME CHECK WITH HENRY.

LET ME PRESS THIS BUTTON HERE.

PAIN IS IMPORTANT TO PROTECT OUR BODY. IT IS LIKE AN ALARM SYSTEM.

WHOH

CLARA, REMEMBER WHEN YOU STEPPED ON THAT NAIL WHEN YOU WERE PLAYING HIDE AND SEEK?

YES, I REMEMBER, PROFESSOR.

HOW DID YOU FIND OUT THAT YOU HAD STEPPED ON THE NAIL?
I FELT PAIN.

THE PAIN SERVED AS AN ALARM TO WARN YOU THAT YOU HAD STEPPED ON A NAIL.

I GOT IT, PROFESSOR. MY FOOT SENSORS SENT MESSAGES TO WARN MY BRAIN.

EXACTLY, CLARA!

LET US FIND OUT A LITTLE MORE ABOUT THE BRAIN.

COME ON, HENRY.

THE BRAIN IS RESPONSIBLE FOR CONTROLLING OUR ENTIRE BODY. ALL KINDS OF MESSAGES FROM OUR BODY COME TO THE BRAIN.

THE SMELL OF A CAKE BAKING IS A MESSAGE THAT COMES FROM THE SENSORS IN THE NOSE.

THE SOUND OF A SONG IS A MESSAGE THAT COMES FROM THE SENSORS IN THE EARS. THE LIGHT OF DAY IS A MESSAGE THAT COMES FROM SENSORS IN THE EYES. A TIGHT SHOE IS A MESSAGE COMING FROM SENSORS IN THE SKIN.
The brain can also send messages to our entire body. The brain tells us the way we move to kick a ball, how to play videogames and how to run.

Our brain is the super computer of our body that controls everything.

Clara, do you remember some days after you had stepped on the nail the wound healed and the pain disappeared? I remember that my foot was aching for a few days. It was difficult to walk.

When we get hurt our sensors in the skin and in the spinal cord send a lot of messages to the brain.

When a wound is healing, the pain gets better every day. The sensors stop to send messages to the brain. The brain turns the alarm off.
WHY AM I IN PAIN MOST OF THE TIME? EVEN WHEN I'M DOING SOMETHING FUN?

GOOD QUESTION, FRED. LET US SEE WHAT HAPPENS TO OUR BRAIN WHEN WE FEEL PAIN FOR A LONG TIME.

LET ME PRESS THIS BUTTON HERE.

WHEN WE FEEL PAIN FOR A LONG TIME, OUR BRAIN IS ON ALERT ALL OF THE TIME, AND AN ALARM CAN BE TRIGGERED BY ANY SIGNAL.

OUR ALARM GOES CRAZY AND CAN BE TRIGGERED EVEN IF NOTHING HAS HAPPENED.

IT MEANS THAT PAIN CAN ARISE EVEN IF WE ARE NOT INJURED.
I GUESS THAT IS THE SAME THING THAT HAPPENS WITH MY FATHER’S CAR. THE ALARM TRIGGERS ALL THE TIME.

THAT IS IT, FRED. OUR ALARM CAN BE SO CRAZY THAT OUR BRAIN GIVES THE ORDER TO FEEL PAIN AND PROTECT US.

THE PAIN CAN STILL INCREASE WHEN WE ARE NERVOUS, WORRIED, ANXIOUS OR STRESSED.

DO YOU KNOW THAT THE BRAIN CAN ALSO PRODUCE MEDICINES THAT HELP TO DECREASE PAIN?

OH, REALLY? I DID NOT KNOW WE HAD A DRUGSTORE IN OUR BODY.

LET US CHECK WITH HENRY.
Our brain produces substances that are like medicines that serve to decrease the pain.

The brain produces more medicines when we exercise, play with friends and relax.

When the brain analyses all of the incoming messages from the sensors, it can decide whether or not to trigger the alarm.

The brain can release several medicines within the body to decrease pain.

Sometimes the brain thinks that the message is too dangerous and triggers the alarm too loudly.
Professor, does our brain choose when to trigger the alarm?

Yes, Clara.

So, does our brain command everything?

Very clever, Fred.

Hey Fred, look how interesting the brain is.

Pain can get worse when we do not sleep well, when we don’t exercise, or when we are anxious, angry, or stressed.
All this helps to trigger our alarm.

Professor, I understand about the sensors, the nerves and the alarm system. How can we improve pain?

There are some things we can do to control our alarm system.

What kind of things, professor?

It is important to understand that pain does not always mean that we are injured.
Pain can happen even though there is no injury or disease.

We need to assess what we are able to do or not to do when we are in pain.

But there are other things that we can do, such as get better quality sleep or more sleep, exercise, relax and do fun things, and spend time with family and friends.
HOW CAN I SLEEP BETTER?

TRY TO GO TO BED AND WAKE UP EVERY DAY AT THE SAME TIME. DON'T TAKE A NAP IN THE AFTERNOON. THE BED IS THE PLACE TO SLEEP, TRY TO STUDY, LISTEN TO MUSIC, AND WATCH TV SOMEWHERE IN ANOTHER ROOM.

BEBTIME IS ALSO NOT THE TIME TO PLAY ON YOUR PHONE OR TABLET BECAUSE THEY KEEP OUR BRAIN AWAKE.
WHAT ABOUT KEEPING TRACK OF THE TIME THAT YOU WENT TO SLEEP AND WOKE UP EVERY DAY THIS WEEK?

I LIKE THAT IDEA, PROFESSOR. I'LL TAKE MY NOTES EVERY DAY.

PROFESSOR, SOMETIMES I FEEL VERY NERVOUS.

WHAT CAN I DO TO NOT FEEL SO NERVOUS?

HAVE YOU EVER HEARD OF PRACTICING RELAXATION?
I practice relaxation at the beach, Professor.

You do not need a beach to relax, Fred.

Can you see that pain can make our muscles tense? It is important to learn how to relax your body.

Relaxation can improve the pain and make you feel calmer.

When you are upset, angry or nervous, you can do these relaxation practices. Remember that the more you practice, the easier it will be to relax.

How can we relax?

One way to practice relaxation is by using our own breathing.
WE CAN CONTROL OUR BREATH.

HAVE YOU NOTICED THAT WHEN WE ARE NERVOUS, OUR BREATH IS SO FAST THAT WE LOOK LIKE A KETTLE?

HA HA HA, IT IS TRUE!

LOOK FOR A QUIET PLACE AT YOUR HOME; IT CAN BE IN THE GARDEN OR A PLACE INSIDE THE HOUSE.

YOU CAN SIT OR LIE DOWN. BREATHE THROUGH YOUR NOSE SLOWLY.

FILL YOUR BELLY SO THAT YOU HAVE A ROUND BELLY WHILE COUNTING TO FIVE. RELEASE THE AIR SLOWLY.
PLACE YOUR HANDS ON YOUR BELLY; WHEN YOU INHALE, SEE THAT YOUR BELLY FILLS.

IT WILL LOOK LIKE YOU HAVE A BALLOON OF AIR IN THE BELLY THAT FILLS AND EMPTIES.

DO THIS BREATH 20 TIMES AND PAY ATTENTION TO EACH BREATH.

WHEN YOU SAID I WAS GOING TO PRACTICE, I WAS WONDERING IF YOU WOULD SAY THAT I HAVE TO DO EXERCISES.

ARE EXERCISES GOOD FOR PEOPLE WHO HAVE PAIN?

YES, CLARA.
Exercises make our body stronger and also help to control our alarm system.

When we exercise, we produce many medicines that relieve pain.
WHEN I HAVE PAIN, I DON'T FEEL LIKE DOING ANYTHING.

SOMETIMES THE PAIN CAN BE SO INTENSE THAT IT DOES NOT LET US DO ANYTHING. BUT AT OTHER TIMES, WE CAN STILL DO MANY THINGS. EVEN GO TO SCHOOL.

THIS HAS HAPPENED TO ME, BUT I TRIED TO GO TO SCHOOL EVEN THOUGH I WAS FEELING PAIN. WHEN I GOT TO SCHOOL, I HAD SUCH A GREAT TIME THAT THE PAIN PASSED.

WE SHOULD ALWAYS TRY TO KEEP UP WITH OUR ROUTINE BY GOING TO CLASSES, PLAYING SPORTS AND MEETING OUR FRIENDS.

WHEN WE ARE IN PAIN, WE CAN TRY TO DO OUR ACTIVITIES IN SMALL AMOUNTS.

IMAGINE THAT YOU HAVE TO EAT A WATERMELON. NO ONE CAN EAT AN ENTIRE WATERMELON AT ONE TIME.
WE HAVE TO EAT IT IN SMALL PIECES.

IT IS IMPORTANT THAT WE GET BACK TO DOING OUR USUAL ACTIVITIES IN SMALL AMOUNTS.

THIS WILL SHOW OURSELVES THAT WE CAN DO A LOT OF GREAT ACTIVITIES.

I ALSO THINK THAT EXERCISE IS VERY IMPORTANT AND FUN.

WE CAN CHOOSE OTHER THINGS THAT WE LIKE TO DO.

THERE ARE SO MANY COOL THINGS TO DO.

GOING FOR A WALK.

READING A BOOK.

PLAYING WITH A FRIEND.

LISTENING TO MUSIC.

HOW ABOUT PICKING ONE OF THOSE ACTIVITIES TO DO?
Professor, I like to exercise, go to school and go to the movies because I always get to meet friends.

This is true. Doing exercises and playing with friends is always very fun.

Friends help us in many ways, and we always have more fun with friends.

Therefore it is useful to spend time with good friends.

Professor, we learned a lot about pain.

That is good, kids.

We enjoyed spending this afternoon with you to learn about pain. Thanks Professor.
NOW I KNOW A LOT OF THINGS ABOUT PAIN. WHEN I GET HURT MY SENSORS SEND MESSAGES TO MY BRAIN. WHEN WE FEEL PAIN FOR A LONG TIME OUR ALARM SYSTEM CAN RING ALL THE TIME.

WE MUST GO HOME, CLARA. WE NEED TO STUDY FOR TOMORROW.

BYE, PROFESSOR!

BYE, KIDS. YOU ARE ALWAYS WELCOME.

CLARA, THANK YOU FOR GOING TO PROFESSOR DEXTER'S HOUSE WITH ME. NOW I UNDERSTAND A LOT ABOUT PAIN.

YOU ARE WELCOME, FRED. IT WAS FUN.
Now I need study for the math test.

Are you still in pain?

A little bit. But it is not bothering me.

See you tomorrow.

See you tomorrow.

How was your afternoon, Fred?
It was great, mom. We went to Prof. Dexter’s lab. I learned a lot of things about pain.

I will study, do my relaxation practice, listen to music and go to bed early.

Tomorrow I will be ready to go to school and to my soccer practice.

Great, Fred. I will help you with your homework.

These ideas might help you to improve your pain.

I learned all of this today with Professor Dexter.
THE NEXT DAY

GOOD MORNING, FRED. IT IS TIME TO GO.

HI, CLARA. GOOD MORNING.

I AM PREPARED FOR THE MATH TEST. AFTER THE LESSON WE HAD ABOUT PAIN WITH PROFESSOR DEXTER, I WOKE UP FEELING A LOT BETTER.
AND YOU ARE NOT FEELING ANY PAIN TODAY?

YOU ALWAYS COMPLAIN ABOUT PAIN.

I WOKE UP WITH A LITTLE PAIN.

BUT I DID THE RELAXATION EXERCISE THAT PROFESSOR SHOWED US.

IN THE AFTERNOON I WILL GO TO MY SOCCER PRACTICE.

That is cool, Fred. Changing your habits is the first step you can take to change your pain.

THE END.
HI. IN TODAY'S STORY WE HAVE SEEN HOW PAIN WAS DISRUPTING FRED'S LIFE. LET'S TAKE SOME IMPORTANT NOTES ABOUT PAIN.

1. DO YOU KNOW THAT THERE IS A TYPE OF PAIN CALLED ACUTE PAIN? IT LASTS UP TO 3 MONTHS. THIS PAIN HAPPENS WHEN WE GET HURT. LIKE WHEN CLARA STEPPED ON THE NAIL.

2. AND DO YOU KNOW THAT THERE IS ALSO A TYPE OF PAIN CALLED CHRONIC PAIN? THIS LASTS LONGER (MORE THAN 3 MONTHS). IT CAN LAST EVEN WHEN WE ARE NOT HURT ANY LONGER. IT CAN ALSO HAPPEN BECAUSE OF AN ILLNESS (LIKE WHEN CHILDREN ARE IN THE HOSPITAL).

3. SOME DISEASES CAN CAUSE PAIN FOR A LONG TIME. IN THESE CASES IT IS IMPORTANT TO KNOW IF THERE IS ANY PROBLEM IN OUR BODY.

4. SOME TYPES OF PAIN ARE COMMON IN CHILDREN SUCH AS PAIN IN THE BELLY, HEAD, OR PAIN IN THE BONES AND IN THE MUSCLES.

5. PAIN IS THE MOST POWERFUL ALARM SYSTEM IN OUR BODY. IT SERVES TO ALERT US WHEN OUR BODY IS IN DANGER.

6. THERE ARE SENSORS IN OUR SKIN THAT SEND MESSAGES OF HEAT, COLD, TIGHTNESS, OR ITCHING TO THE BRAIN.

7. THE NERVES ARE THE MESSengers OF OUR BODY. THEY TAKE MESSAGES FROM THE SENSORS TO THE SPINAL CORd (WHICH IS INSIDE OUR SPINE).

8. THE SPINAL CORd GETS ALL THE MESSAGES AND SENDS IT TO OUR SUPER COMPUTER (BRAIN).

9. WHEN WE GET HURT (LIKE WHEN WE CUT OUR FINGER), THE SENSORS SEND LOTS OF MESSAGES TO THE SPINAL CORd AND TO THE BRAIN.

10. THE BRAIN (OUR SUPER COMPUTER), ANALyzES ALL THOSE MESSAGES THAT ARRIVE WITH OTHERS FROM ITS FILE. IF NECESSARY, THE BRAIN TRIGgers THE ALARM.
11 After analyzing its files, the brain may send a signal to the spinal cord to stop sending messages or to send more messages.

12 When the brain rings the alarm, we feel pain.

13 The amount or strength of messages in the brain increase when we sleep badly, do not exercise, do not play, have tense muscles or when we are sad, stressed or worried.

14 The brain can trigger the alarm for many reasons.

15 Why can the pain last so long? Scientists have discovered that pain can change our sensors, spinal cord and brain.

16 When we feel pain for a long time the sensors, the spinal cord and the brain stay alert all the time. This keeps the alarm system ready to trigger at all times.

17 Sleeping well, exercising, playing with friends, walking, and relaxing all help control our alarm.

18 Pain can exist even if all doctors say that everything in your body is normal. All pain is real.

19 Hiding the pain is not the best option. It is important that you seek help by talking with your parents.

20 You may have a team that helps you treat your pain. This might include your parents and other players (doctors, physiotherapists, psychologists, nurses, occupational therapists). It is great to have all of this support.
I HOPE YOU ENJOYED THE STORY AND LEARNED A LOT ABOUT THE PAIN. LET'S TAKE A SHORT QUIZ.

1. IT IS POSSIBLE TO HAVE PAIN AND NOT KNOW ABOUT IT.  
   ( ) TRUE ( ) FALSE

2. THE BODY HAS PAIN RECEPTORS.  
   ( ) TRUE ( ) FALSE

3. THE ALARM SYSTEM RINGS ONLY WHEN YOU ARE INJURED.  
   ( ) TRUE ( ) FALSE

4. WHEN YOU ARE INJURED, SPECIAL RECEPTORS SEND THE DANGER MESSAGE TO THE BRAIN.  
   ( ) TRUE ( ) FALSE

5. THE SPINAL CORD SENDS MESSAGES TO YOUR BRAIN.  
   ( ) TRUE ( ) FALSE

6. CHRONIC PAIN MEANS THAT AN INJURY HASN'T HEALED PROPERLY.  
   ( ) TRUE ( ) FALSE

7. THE BODY TELLS THE BRAIN WHEN IT IS IN PAIN.  
   ( ) TRUE ( ) FALSE

8. PAIN OCCURS WHenever YOU ARE INJURED.  
   ( ) TRUE ( ) FALSE

9. THE BRAIN DECIDES WHEN YOU WILL EXPERIENCE PAIN.  
   ( ) TRUE ( ) FALSE

10. PAIN IS NORMAL, PERSONAL AND ALWAYS REAL.  
    ( ) TRUE ( ) FALSE

11. LEARNING ABOUT PAIN AND WHAT TO DO CAN HELP YOU IMPROVE YOUR PAIN.  
    ( ) TRUE ( ) FALSE

12. PAIN ACTS AS AN ALARM.  
    ( ) TRUE ( ) FALSE
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