A School Administrator's Healthy School Indoor Air Quality (IAQ) Companion

March 2015

An Overview…

- **Part I:** an overview of the importance of good quality indoor air to health and learning . Featuring Canada's Tools for Schools IAQ Action Kit.
- **Part II:** Understanding environmental impacts on health and learning
- **Part III:** A virtual school walk-through
- **Part IV:** Building Healthy New Schools

Do you remember when…

Asthma was thought to be caused by stress?
And stomach ulcers were too?

Tuberculosis, Epilepsy, Syphilis, Lyme disease, and more, were once similarly misunderstood.

We are learning more about how buildings affect occupants' health and ability to function

- **Did you know that within 26 seconds of using a cleaning material, the chemicals in the cleaning material can be found in every organ of the body?**

  - *CCHC*

We are learning that…

- **Outdoor and indoor pollution can harm people.**
- **So can indoor mould.**
- **So can many commonly used chemicals…in ways we previously only suspected.**

School Administrators Have a Vital Role to Play in School IAQ

1. **There are school indoor environment issues over which school administrators have control.**

2. **The work of the building maintenance and operations team benefits from partnership with the school administration.**

Common Concerns in School Indoor Environments

- **Mould:** Indoor mould hazards from dampness, condensation and leaks.
- **Renovations:** Volatile chemicals from new building materials, paints, glues, caulking, new furniture and equipment…and asbestos, lead, mercury… in older buildings
- **Cleaning Supplies:** Low-emission, non-toxic supplies are available. Beware of "greenwashing". Go for "green" AND "healthy".
- **Ventilation:** Mechanical systems need regular service. Schools without these systems still require adequate ventilation.
- **Relative Humidity** and **temperature** affect health & well-being.
- **Dust Mites:** Dust is a common allergen. Clean without stirring up dust.
- **Pesticides:** Safer alternatives are available.
- **Pets:** Many children react to pet dander. Avoid pets overnight.
- **Classroom Materials:** Use electronic screens, low-dust chalk on blackboards and low-VOC whiteboard markers. Avoid liquid white-out, smelly markers... Avoid solvents, glues and paints, materials that irritate or have strong odours.
- **Fragrance:** 70% of asthmatics react to fragrance chemicals. Fragrances also contain unregulated, volatile, toxic chemicals.

Ventilation and Heating Systems:

- dust, mould, or debris in ductwork, coils, humidifiers, drip pans…
- low air delivery rates,
- no HVAC present,
- turning off HVACs after hours

Natural but hazardous Materials:

- lead, asbestos, PCBs, ozone…

Other:

- lighting
- thermal comfort
- humidity
- acoustics: noise pollution
- electromagnetic fields
- improper renovation
- infrequent or inadequate cleaning

Did you know that… ?

A recent Health Canada study found that 3 out of 4 Canadians still believe that outdoor air is more polluted than indoor air.

(Health Canada 2002, wwwhc-sc,gcca/hecs-es/air_quality/pdf/environics_air_pollution_survey_Epdf)

In fact, indoor air is almost always more polluted than outdoor air

Eg., Benzene is always present in indoor air. Acceptable outdoor standard for benzene is 0.12 ug/m3 and the average found indoors is 16.78 ug/m3.

Benzene is an A-1 carcinogen, connected to childhood leukemia.

(Soheil Rastan,PhD. April 2007, Healthy Indoors Partnership Webinar)

"For every 10 unit increase in the concentration of benzene the risk of childhood asthma increases by three folds."

(Rumchev, K., Association of domestic exposure to VOCs with asthma in young children. Thorax, 2004; 59;746-751.)

When leaks are found, they are usually now fixed - fast - because **mould** can grow in less than 48 hours.

- 60 species of moulds have spores that are allergenic. Some are toxic to humans.

- 30% of patients with respiratory allergies are particularly sensitive to moulds

- Odds of death from asthma is twice as high on days with outdoor mould spore counts ≥1000 spores/ m3

Important New Developments

- **"The old toxicology: The dose makes the problem**
- **The new approach: Very small doses can alter function of the body."**
- **Everyone is affected to some degree.**

- Dr Alan Abelsohn, WHO, Children's Environmental Health Workshop, IWK Hospital, April, 2007.

Harmful chemicals including carcinogens and endocrine disruptors are found in:

Building materials: Insulation, caulking, paints, varnishes, vinyl tile, glues, particle board, plastics…

School supplies: felt markers, whiteout, inks, laminates, photocopiers, printers, fire retardants…

Personal products: perfumes, deodorants, laundry residues…

Cleaning agents: hand soaps, waxes and floor strippers, air fresheners…

Combustion gases: furnaces, vehicle exhaust…

Over 23,000 of chemicals currently in use are not assessed for health effects.

- Medical Perspectives on Environmental Sensitivities. M.E. Sears, 2007

Recent research links 216 common chemical compounds to breast cancer.

www.silentspring.org/sciencereview

Health, learning and behaviour can be affected

Normal subjects exposed to low levels of VOC's from common paints, varnishes, glues, dyes and cleaning agents, suffered significant impairment on tests for learning, memory, visual spatial tasks, attention, mental flexibility, and psychomotor speed.

This study also found a connection between VOC exposures and clinically significant depression, anxiety, somatic concerns (e.g. headache) and disturbances in thinking.

- University of Pittsburgh School of Medicine, Bell, Healthy School Handbook 1992, p. 78

Indoor air contaminants are responsible for half of all school illnesses.

Healthy School Handbook, US National Education Association

The Need for Diligence...

People spend about 90% of their days indoors.
Children and teachers about 1/3 of their days in school.

Teachers may spend years, sometimes their entire careers, in one area of a building. If that area is unhealthy, they likely will be too.

“Chemicals have replaced bacteria and viruses as the main threat to health. The diseases we are beginning to see as the major causes of death in the latter part of (the 1900's) and into the 21st century are diseases of chemical origin.”

Dr. Dick Irwin, Toxicologist, Texas A&M University

Dr. Gerald Ross, Past President of the American Academy of Environmental Medicine stated,

"Health symptoms of chemical exposure such as headaches, breathing problems, itchy and watery nose and eyes, intestinal problems, fatigue, and coughing are often misdiagnosed as colds and flu…

Behavioural symptoms of chemical exposures such as mood swings aggressiveness and hyperactivity are often seen as normal."

Air Pollution

Some Acute Effects

- Irritation of the mucous membranes (eyes, nose, throat)
- Cough, wheeze, chest tightness
- Increased airway responsiveness to allergens
- Increased incidence of acute respiratory illness, cold, pneumonia, otitis media
- Tracheobronchitis
- Exacerbation of asthma

Some Chronic Effects

- Long-term exposure decreases lung growth
- Impairment of pulmonary function
- Increased susceptibility to chronic obstructive lung diseases, including asthma
- Consequences can be life long or can cause premature death

(Dr Jennifer Armstrong, WHO, Children's Environmental Health Workshop, IWK Hospital, April, 2007)

Children are More Vulnerable

1. Dynamic developmental physiology

- Children's bodies are growing and using available foods, chemicals, minerals…to do so.
- Full biological growth occurs around age 18.
- Final brain development is around age 20.

2. Unique exposures

3. Politically powerless

4. Long term health consequences in adulthood

Carolina

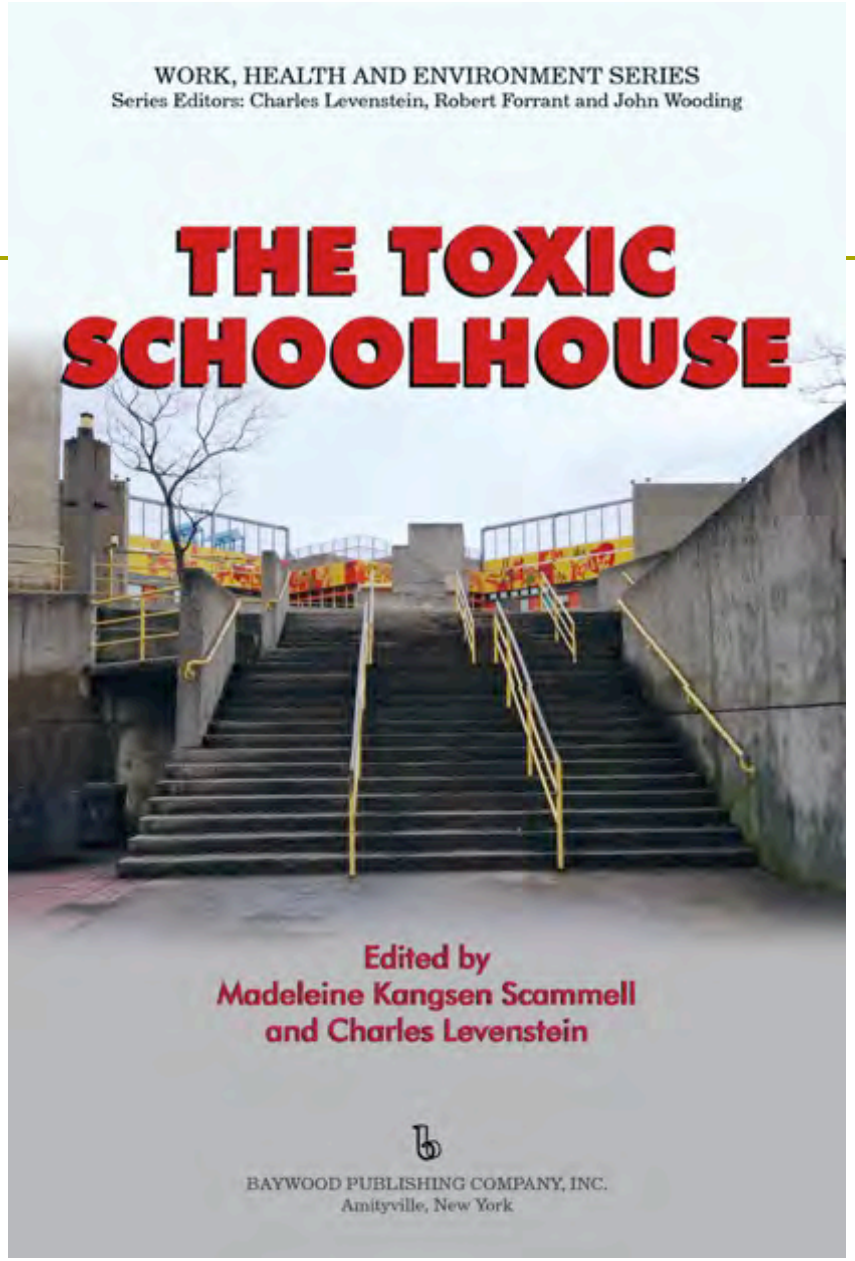
Children are not little adults…

Consequences of common environmental hazards

Are there Solutions?

Controlling Hazardous Products Works

- PBDE, a common flame retardant in fabrics and furniture is an endocrine disruptor. It is not "bound"; comes out easily. Studies found it in human breast milk around the world. Since Europe banned its use, the levels have dropped.
- PCBs were banned in 1977. Levels found in young people are now very low.
- Bisphenol-A (BPA, used in plastics) was declared a toxic substance in 2012. Action to stop exposure has begun.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Twenty-five Years of Progress in Nova Scotia

Then…

- Air intakes & building exhaust vents interaction
- Leaks, mustiness, mould
- Stagnant air - by mid day the air is very "close"
- Non-ventilated photocopiers
- Teaching and cleaning materials containing toxic chemicals
- Asbestos, silica and other hazardous materials improperly handled.

Progress

- Many more factors contributed to headaches, brain sluggishness, respiratory issues, allergies, possible cancers, learning problems and more...

and Now…

- Schools are being repaired, upgraded and replaced
- Safer maintenance practices
- Healthier cleaning progress:
  - ✓ no chlorine bleach cleaners
  - ✓ fewer citrus cleaners
  - ✓ no mop-oil sprayed on dust mops
  - ✓ no endocrine disrupters in cleaning materials
  - ✓ No chemical deodorizers
- Scent-free programs
- Pesticide-free pest control
- Carpeting has been removed (with precautions) and not put back.
- Idle-free vehicle programs beginning
- Less toxic teaching products
- Chemistry, art and science materials are carefully selected, used and stored

Consumer Action

Use: ***HIP's Buyers Guide***

www.lesstoxicguide.ca

The Seven Sins of Green

"Green" and "Healthy" are not always the same.
Make sure…become informed…get both!

Choosing Cleaning Materials

- **Less Toxic and Fragrance Free**

  No preservatives, dyes, phosphates, perfumes, caustics, chlorines, carcinogens, endocrine disruptors, mutagens, teratogens.

- **"Natural" or "green" is not always better:**

  - Avoid Limonene/citrus cleaners (but citric acid is OK)

  - Tea tree oil and lavender oil are sensitizers

  - Avoid Pinene/terpenes

  - Eucalyptus and mint are allergens

- **Avoid :** **- Chlorine bleach**

  - Disinfectants

  - Deodorizers

- **Consider getting professional help from an environmental health perspective.**

…Cleaning Materials and Methods

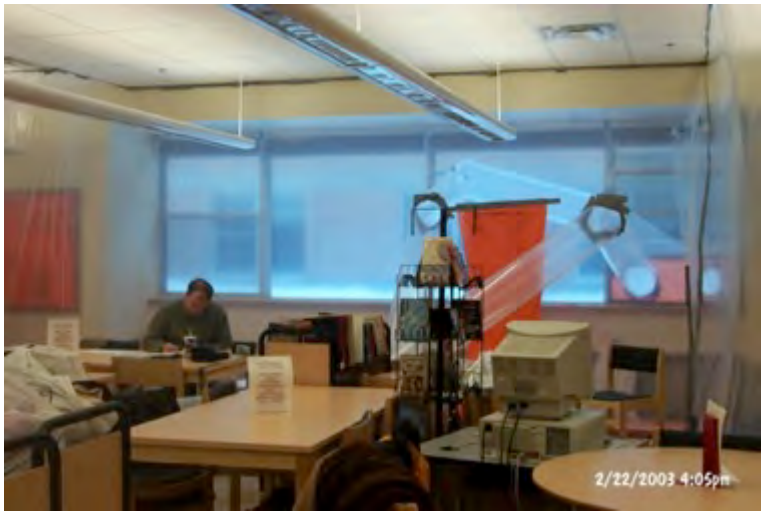
- **Caution:**
  - **- "greenwashing" by companies.**
  - **- Staff or PTA bringing products from home?**
  - **- Cafeterias need to use approved products**
  - **- as do family studies and other school programs**

- **In general:**
  - **- Squirt, don't spray**
  - **- Sweeping stirs up dust (a major allergen & contains pollutants, particles)**
    - **- Use HEPA vacuum**
    - **- Damp mop/wipe**
    - **- Attractant dry mop**

Micro fibre equipment/cloths are revolutionizing cleaning.

How can School Boards Help?

- Train principals well – they are the gatekeepers
- Use least toxic cleaning, maintenance and building materials
- Isolate or schedule renovations to protect occupants
- REQUIRE FLUSH OUTS of new construction and renovations
- Fix leaks fast - mould can grow in less than 48 hours
  (Do not use antimicrobial chemical treatments)
- Photocopiers, laminators, printers…in isolated areas with exhaust
- Clean/dust daily using healthy methods (HEPA vacuum, damp mop)
- Scent-free program (including laundry soaps & fabric softeners)
- Service and balance HVAC systems
- Pesticide-free pest control
- Reduced vehicle idling
- Remove carpeting
- Use Tools for Schools Action Kit



How can teachers help?

- **Select non-toxic, water-based glues, markers, art and classroom supplies…**
- **Avoid**
  - **- Liquid white out**
  - **- Fragrances, smelly stickers/markers**
  - **- Hot lamination**
  - **- Mouldy books**
  - **- Plants**
  - **- Pets**
- **Use only board-approved cleaning supplies and art supplies.**
- **Air photocopies before distribution**
- **Open windows to improve air quality**
- **Air dry-cleaned clothing well before wearing**
- **Use washable "sit-upons" in elementary classooms**
- **Remove classroom clutter**
- **Dust regularly with damp cloth or HEPA vacuum, don't sweep**
- **Adjust or eliminate food rewards**
- **Assist your JOHS Committee**

How can students help?

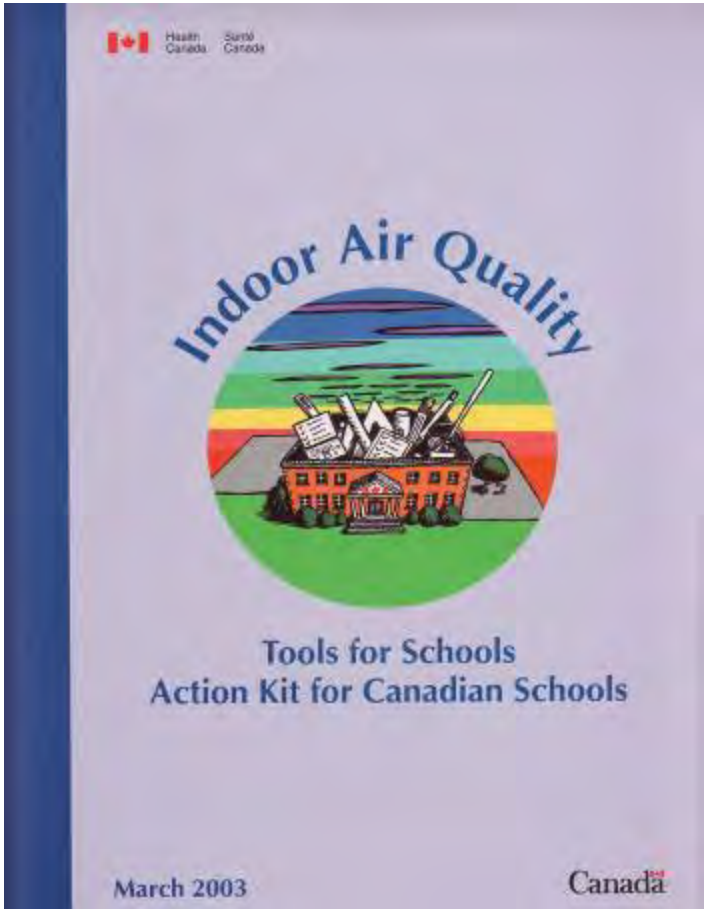
- **Select non-toxic, water-based glues, markers, art and classroom supplies…**
- **Avoid**
  - **- Liquid white out**
  - **- Fragrances, smelly stickers/markers**
  - **- Hot lamination**
  - **- Mouldy books**

- **Air dry-cleaned clothing well before wearing**
- **Choose safer plastic binders etc. or substitute natural materials**
- **Help protect classmates who have asthma, environmental sensitivities…**

Complementary Environmental Health Initiatives:

- Healthy Schools Design and Construction
- "Scent-Smart" Programs
- Reduced vehicle idling
- Recycling, Greening of Grounds, Energy efficiency
- Active and safe routes to school
- Identification, replacement, and safe storage of hazardous materials
- Healthy Homes

The Canadian IAQ Tools for Schools Action Kit



TOOLS for SCHOOLS: Key Features

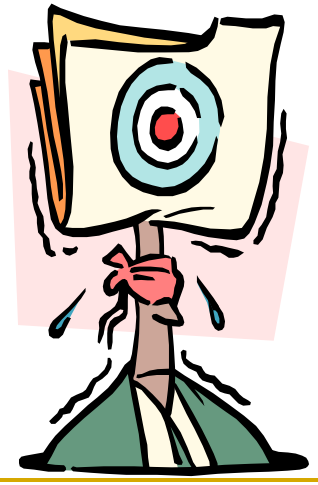
- ✓ Low Cost/No Cost
- ✓ Versatile - Adaptable to Individual School Needs
  - Useful for both Old and New Schools
- ✓ No Specialized Training Needed
- ✓ Practical, Common Sense Approach

Source:IAQ TfS Training Module 1(CD-ROM)

CAN IT REALLY WORK?

EXAMPLE of SUCCESS:

- High school received 1000 calls / year regarding IAQ concerns
- Science teacher used Kit in curriculum
- The school now receives ~ 10 calls / year regarding IAQ concerns.



Sample Checklist (Revised Version)

Excerpted from Tools for Schools Action Kit, Health Canada.

Date:_____Room:_____School:_____

Name:_____Signature: _____

To be completed by:

Teaching staff

Custodial staff

****Read Health Canada's Tools for schools Action Kit's Introduction, Backgrounder and pages 8-3 to 8-15**.

1. GeneralCleanliness

Y	N	N/A	
__	___	__	Classroom is dusted and vacuumed thoroughly and regularly.
__	___	__	Only Board-approved, low-hazard, cleaning materials are used.
__	___	__	Blackboards/whiteboards are cleaned without stirring up dust.
__	___	__	Garbage is removed daily.
__	___	__	Food is not kept in the classroom overnight.
__	___	__	There is no sign of pests.
__	___	__	Desks and lockers are cleaned regularly. (Inspections every three months recommended)
__	___	__	Need help with cleaning or pest control.

www.casle.ca/HealthySchoolsDay

Learning about IAQ is community-building and can protect students and families for life

- See CASLE's website for IAQ lesson plans developed by professionals for P to 12.
- Have students implement the IAQ Tools for Schools Kit
- Participate in Healthy Schools Day in Canada

Classroom Materials

Video: Toxic Trespass. National Film Board of Canada

A 6-minute TED talk video on line is a good introduction to air quality discussions for older students:
http://www.ted.com/talks/jessica_green_are_we_filtering_the_wrong_microbes.html

Sam Suds and the case of PVC http://www.youtube.com/watch?v=qpmE_b90XTU

More classroom materials are on www.casle.ca

The Seven Sins of Green

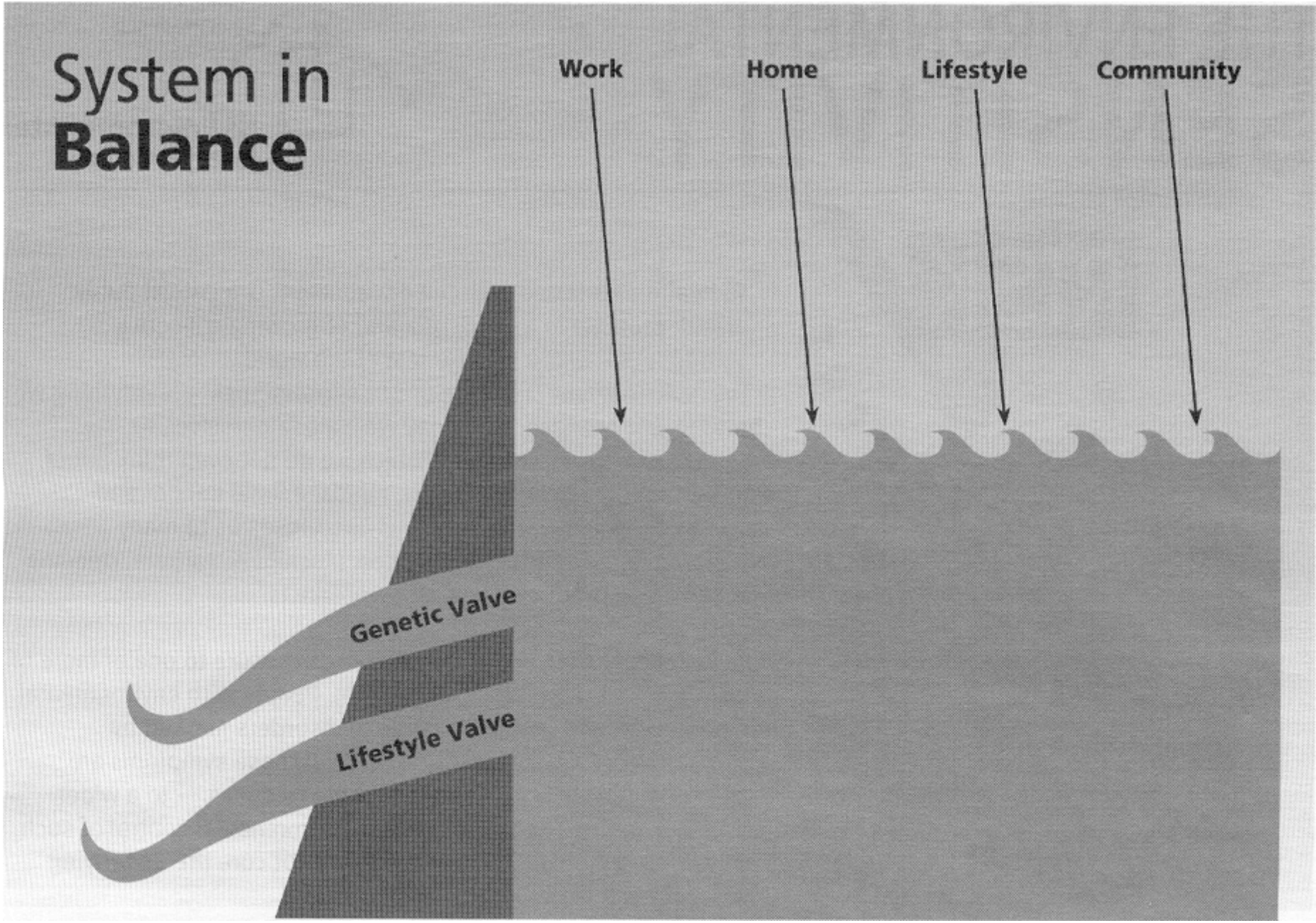
Part II

Understanding Environmental Sensitivities (ES/EI/MCS)

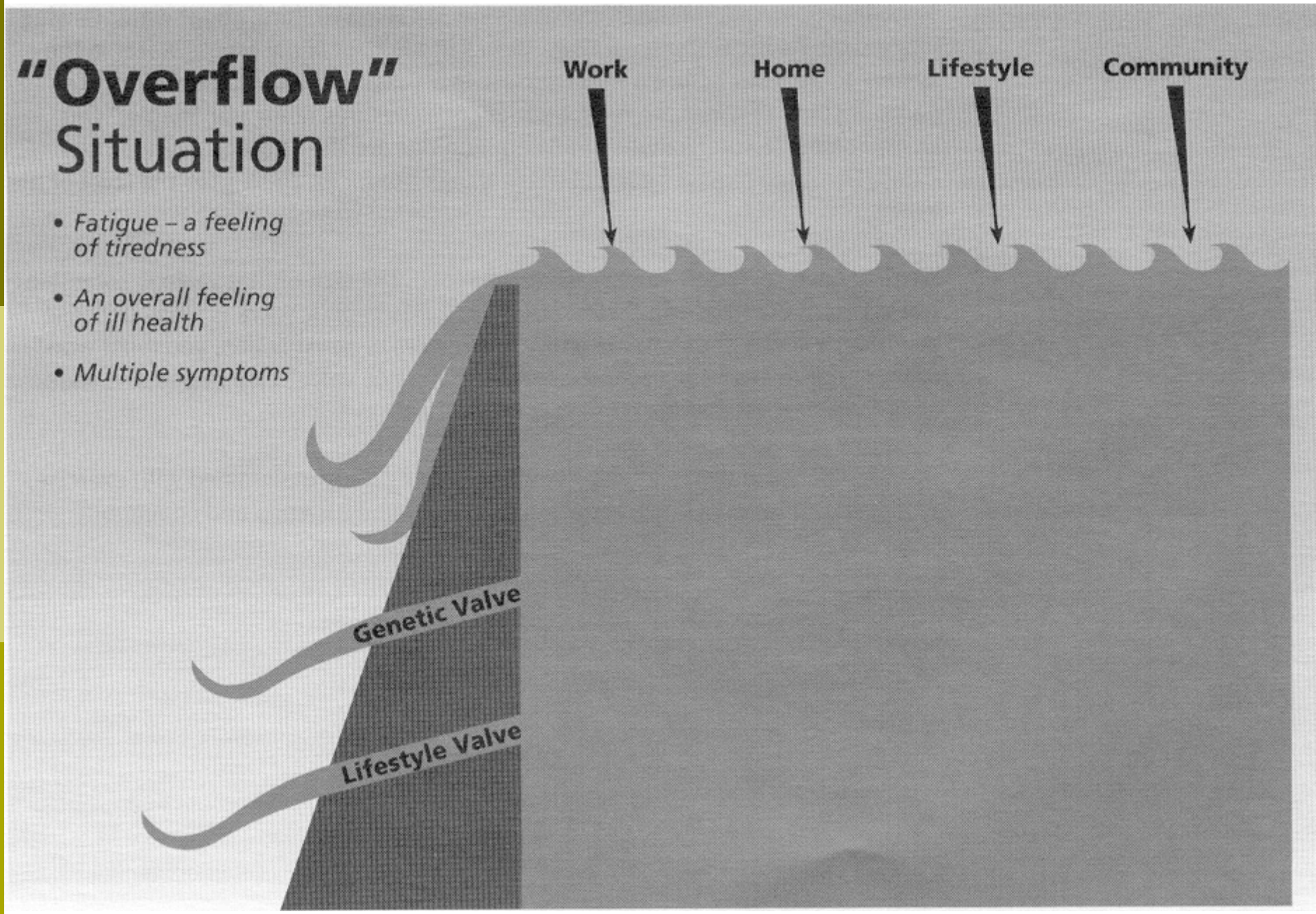
DEFINITION of Environmental Sensitivities:
"a variety of reactions to chemicals, electromagnetic radiation and other environmental factors at exposure levels commonly tolerated by many people."

- Medical Perspectives on Environmental Sensitivities. M.E. Sears, 2007

"Why are some children and staff more affected by environmental quality than others?“



Dr. Roy Fox, NSEHC



Dr Roy Fox, NSEHC

During the Sick Building incident at the US EPA′s Washington offices in the 1990′s, carpet glues made over 100 workers ill.

And no two had exactly the same symptoms.

How could this be?

Our bodies have differences.

"A study of two women in a workplace tested blood chemical levels at the end of their workday. Levels were the same. Repeat tests the next morning found one at 0 and the other′s levels were unchanged. Why?

Some are missing glutathione, detox genes, minerals..."

-Dr Jennifer Armstrong, WHO, Children′s Environmental Health Workshop, IWK Hospital, April, 2007

We are what we eat, drink, breathe and touch

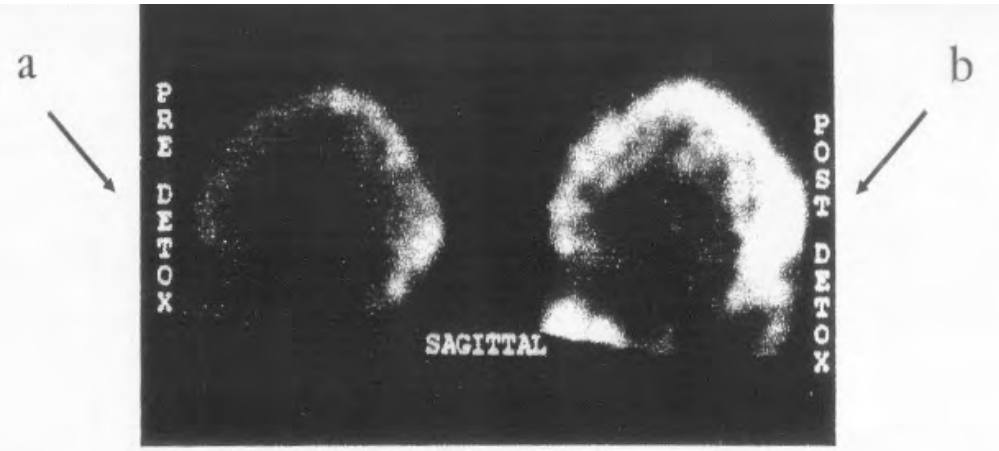
- **We ingest** additives and pesticide residues in our food and drink**.**
- **We absorb** chemicals through the skin from such products as hair dyes, skin products and cleaning materials.
- **We inhale** pollutants from many sources.

- **"Sometimes people who experience intense or ongoing exposure to one or more of these chemicals or irritants become sensitive to them."** *(NSEHC Risk Assessment)*

  This is called Environmental Sensitivity (ES) or Multiple Chemical Sensitivity (MCS) or Environmental Illness (EI).

Research using SPECT brain scans

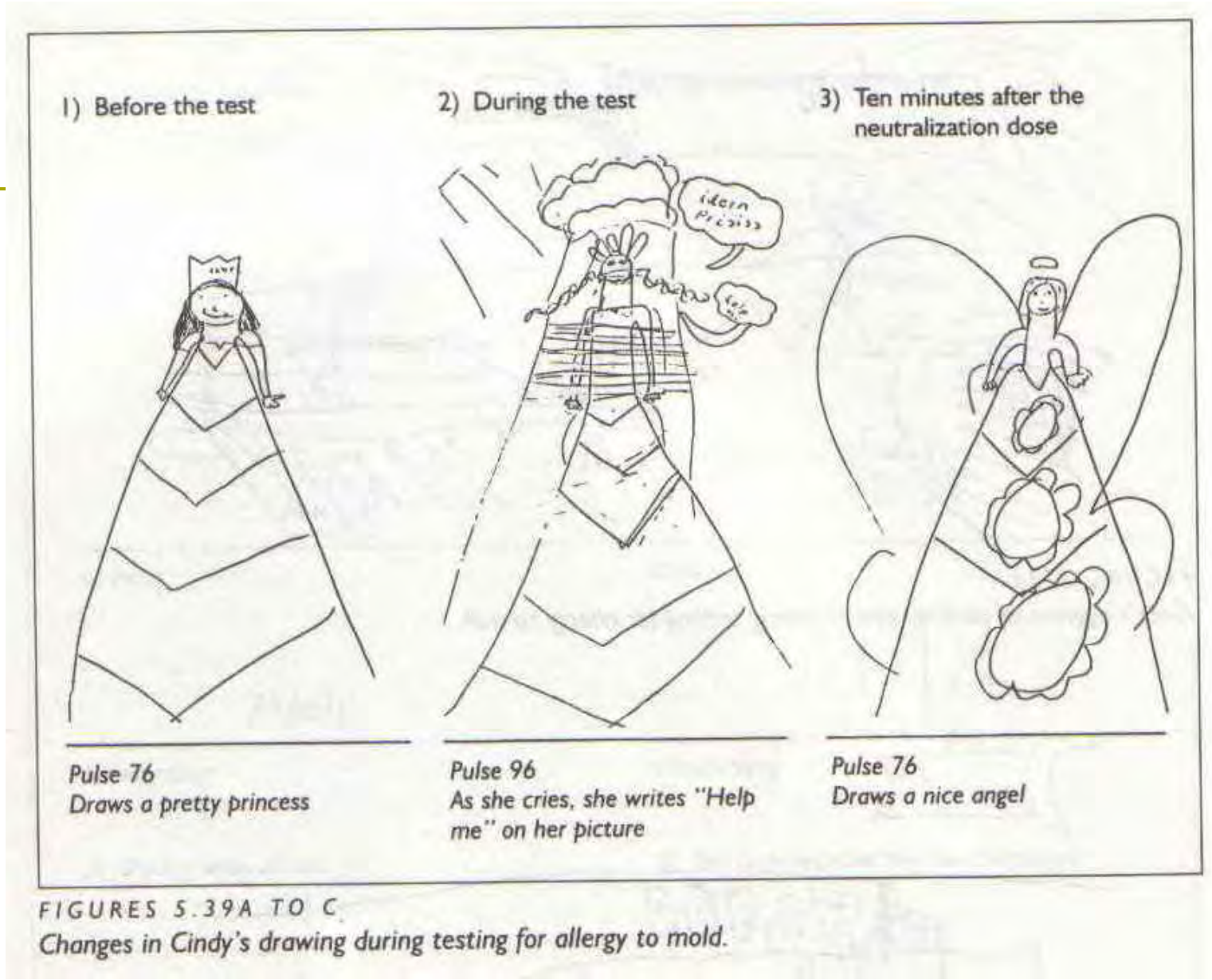
This shows a cause and effect relationship between toxin exposures and brain function. The light areas indicate brain functions. The scan on the left is that of a 12-year-old child with metal toxicity from tooth braces. The one on the right is the same child after removal of the braces and detoxification treatment.



igure 2-4.

: Brain scan of 12-year-old with braces before treatment.

: Brain scan of 12-year-old after treatment. Light areas denote improved brain functions.



FIGURES 5.39A TO C
Changes in Cindy's drawing during testing for allergy to mold.

Is this Your Child's World? Dr. Doris Rapp, 1996

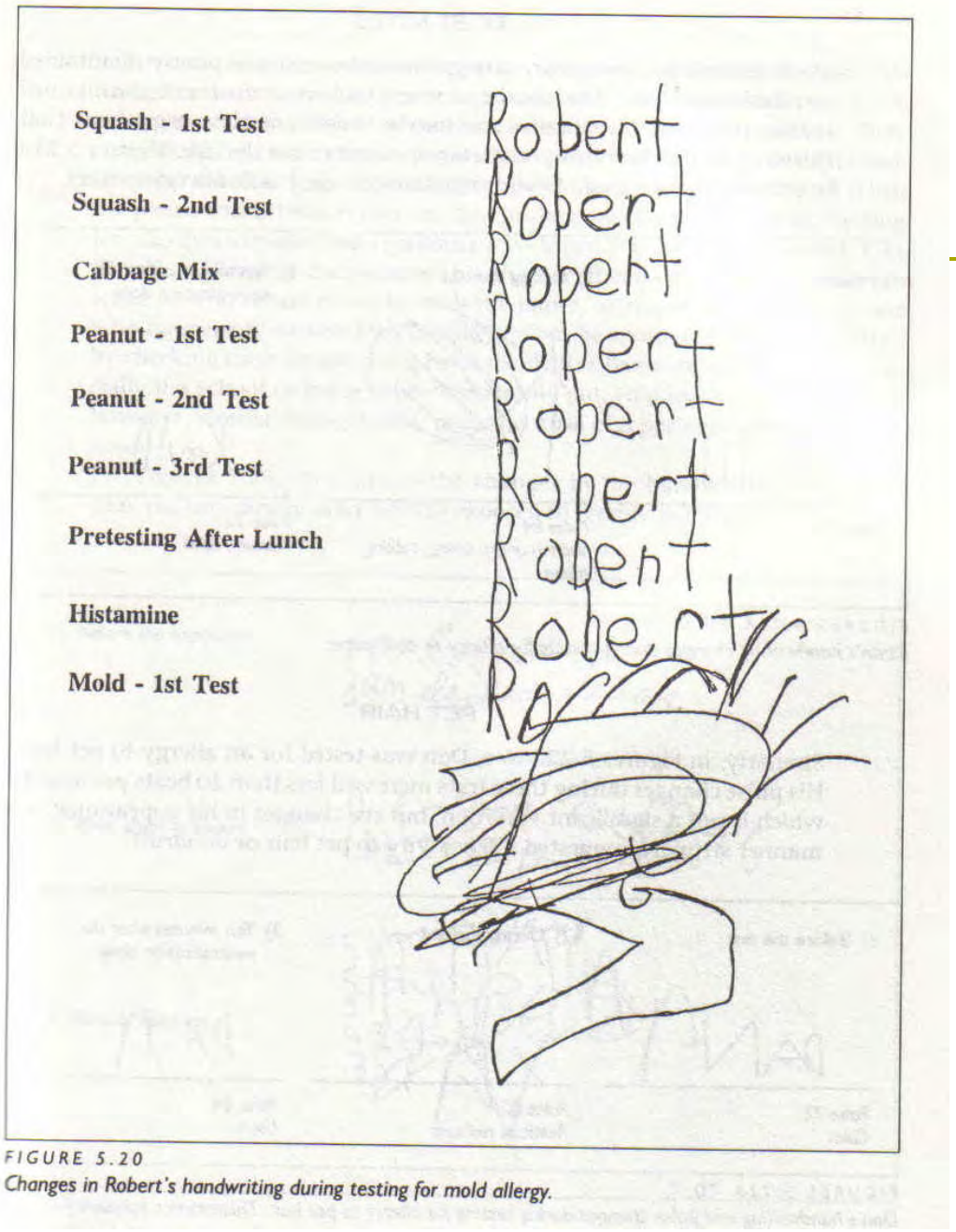
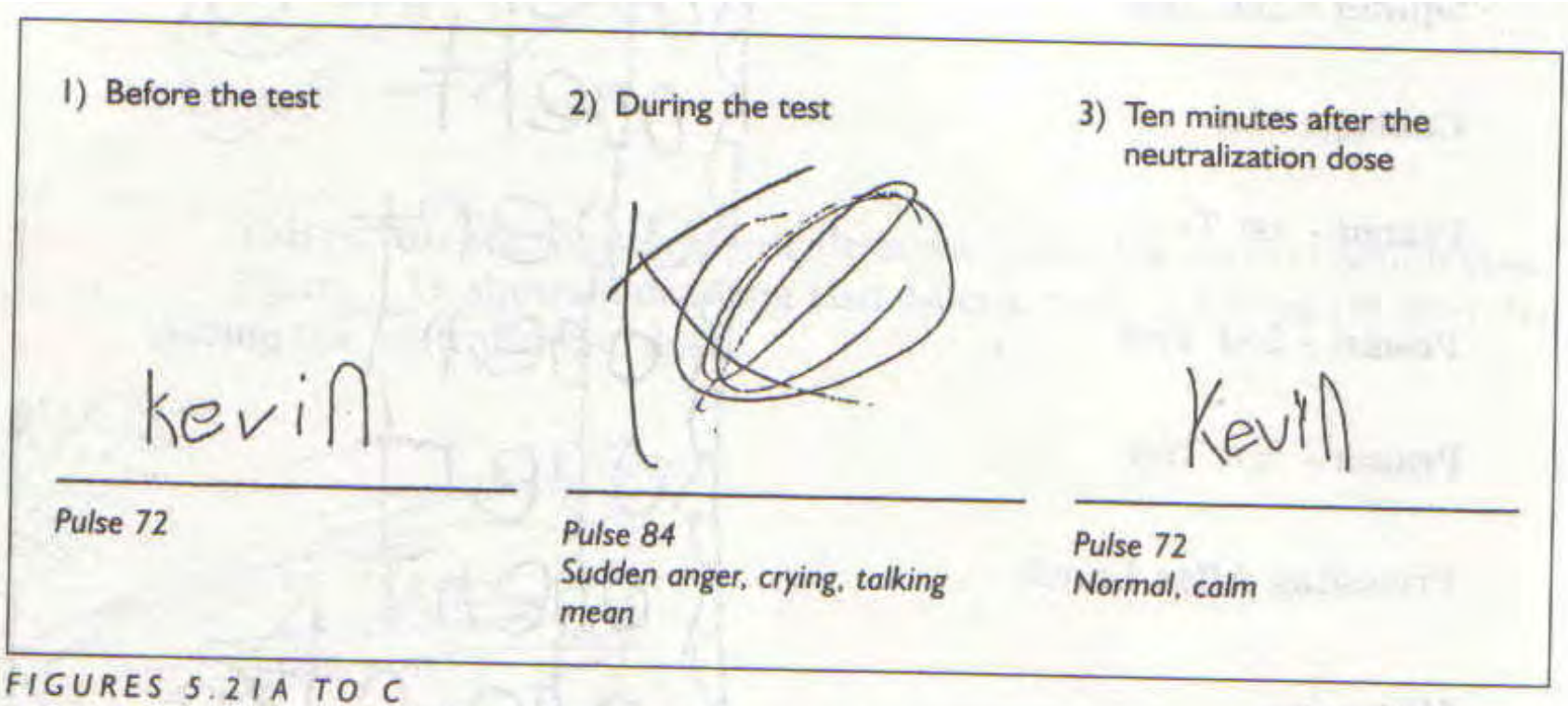


FIGURE 5.20
Changes in Robert's handwriting during testing for mold allergy.

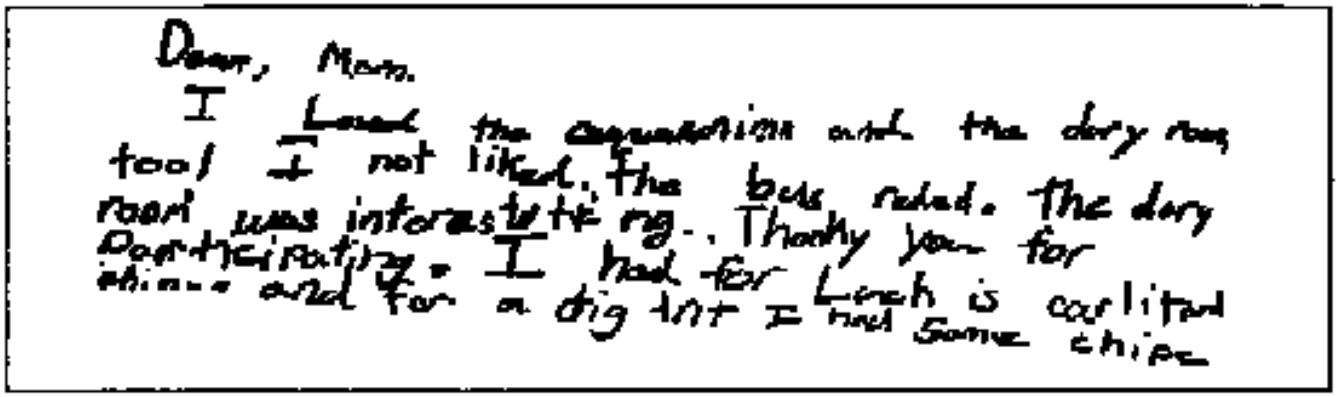
Is this Your Child's World? Dr. Doris Rapp, 1996



FIGURES 5.21A TO C
Kevin's handwriting changes during testing for allergy to dust mites.

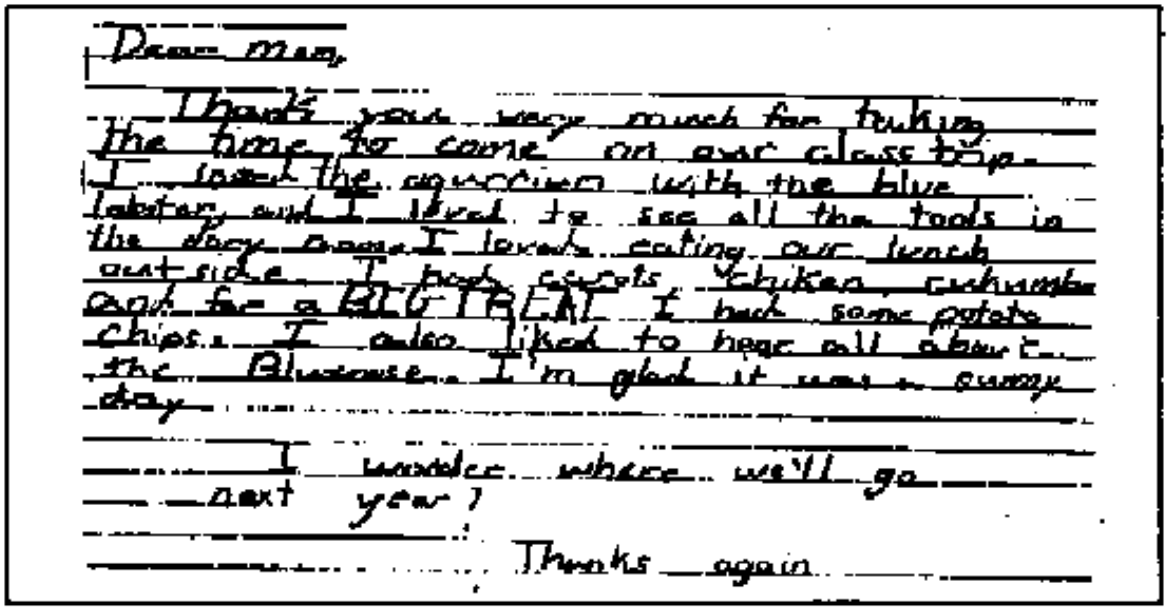
Is this Your Child's World? Dr. Doris Rapp, 1996

These are excerpts from letters by a local 9 year old with environmental sensitivities to perfumes, cleaning materials and construction materials.



Dear, Mom.
I Loved the aquarium and the dry room too! I not liked the bus ride. The dry room was interesting. Thanky you for participating. I had for Lunch is cauliflower and for a dig int I had some chips

The first, above, was written IN SCHOOL. She was trying her best but her teacher had perfume on and the janitor had just finished cleaning the classroom. The second letter, below, was written THE SAME DAY after a 45 minute walk outside. She had no additional help.



Dear mom,
Thank you very much for having the time to come on our class trip. I loved the aquarium with the blue lobster and I liked to see all the tools in the dry room. I loved eating our lunch outside. I had carrots, chicken, cucumber and for a DESSERT I had some potato chips. I also liked to hear all about the Bluenose. I'm glad it was a sunny day.
I wonder where we'll go next year!
Thanks again

Implication for schools

- **Children exposed to pollution may not perform well.**
- **Some feel ill.**
- **Some may have behavioural problems that can affect the whole class.**

- The Big Five can help

The Big Five: method for determining environmental impacts on learning and health

The BIG FIVE are: appearance, actions, pulse, breathing, and writing.

After being exposed to a condition, food, location, medication, or anything else that might be a possible "incitant", check yourself or your child in the following way:

a) Has pulse inexplicably changed (up or down) 20 pulses from normal?

b) Note breathing changes. Use a Peak Flow meter to check air flow. Is there a drop of 15% or more?

c) Observe and record how your child looks. (wiggly legs? red ears? dark, red, runny, sore eyes or nose?)

d) Note changes in behaviour or how s/he feels. (tired, pains, hyperactive, angry, sad...?)

e) Can your child write or draw as well as usual?

The Canadian Human Rights Commission published a Policy on Environmental Sensitivities

http://www.chrc-ccdp.gc.ca/sites/default/files/envsensitivity_en.pdf

This site includes a review of current medical information on this illness.

- **The Diagnostic Criteria are accepted internationally**
- **Canadian Workers Compensation Boards are providing compensation for workers disabled by ES.**

- Medical Perspectives on Environmental Sensitivities. M.E. Sears, 2007

Diagnostic Criteria for ES

- Symptoms are reproducible with repeat exposure
- The condition is chronic
- Low levels of exposure result in symptoms
- Symptoms improve or resolve when the incitants are removed
- Responses occur to multiple chemically related substances
- Symptoms involve multiple organ systems
- Neurological symptoms may be involved

- Medical Perspectives on Environmental Sensitivities. M.E. Sears, 2007

- Reactions occur at levels previously tolerated by the individual.
- Sufferers have their own combination of sensitivities and their own reactions to them.
- The Spreading Phenomenon: Reactions can occur to man-made or to natural materials: mould, foods, pine, light, noise, electromagnetic radiation…
- However, some incitants are "universal": chemicals, moulds, dust...
- Impacts range from mild (sub-optimal, but still "normal") to debilitating.
- Reactions may not occur immediately.
- Left untreated, illness can increase.

- Sensitivities vary greatly from one person to another so the **sensitive person should be involved in determining accommodations**.
- Improvement is possible with early recognition, avoidance of factors, and treatment to remove toxins.
- Children respond particularly well.

- Medical Perspectives on Environmental Sensitivities. M.E. Sears, 2007

Examples of Symptoms

- **Nervous System:** confusion, feeling "spacey", headaches, trouble finding names or words, seizures, anxiety, depression, memory problems…
- **Respiratory System:** stuffy, itchy nose, blocked ears, sinus pain, stuffiness, infection, cough, asthma, frequent chest infections
- **Eyes:** dark rings, red, watery, pain, blurred vision
- **Gastrointestinal System:** Heartburn, nausea, bloating, pain, diarrhea, constipation
- **Endocrine System:** fatigue, blood sugar fluctuations
- **Musculoskeletal System:** joint and muscle pain, spasms, weakness
- **Cardiovascular System:** rapid or irregular heartbeat, cold extremities, high or low blood pressure
- **Skin:** flushing, hives, eczema, rashes, itching
- **Genitourinary System:** frequency and urgency to urinate, painful bladder spasms

Treatment

- **Avoidance of incitants/triggers**
- **Reduce the body's toxic load:**
  Clean air….clean food….clean water
- **Medical treatment from specialist in ES**

An Environmentally Sensitive Person May Need…

- Special cleaning products or classroom supplies to accommodate specific sensitivities
- An air filter in the classroom (caution: do not use ozone generating purifiers. The EI may require special filters.)
- Purified water
- List of food ingredients in cafeteria
- Outdoor clothing kept in lockers
- No pets, plants, mouldy books or compost in the classroom
- Seating near a window
- At-home schooling sometimes
- Compassion, understanding, cooperation
- More…

Work together for solutions

More about ES…

- Approximately 3% of Canadians have been diagnosed with environmental sensitivities.
- All ages and both sexes (Babies can be born with it)
- **ES may develop gradually after chronic exposure to relatively low levels of chemicals as seen in sick buildings, or suddenly after a major exposure…**
- **The condition may be initiated by one or a combination of environmental factors such as mould, pesticides, solvents, chemical off-gassing…**
- There appear to be genetic factors (missing detoxification enzymes…)
- Nutritional balance appears to be involved either as a causal factor or an outcome.

Learn more by reading:

Guidelines to Accommodate Students and Staff with Environmental Sensitivities: A Guide for Schools.

by Nancy Bradshaw of Women's College Hospital Environmental Health Clinic and Karen Robinson of Canadians for A Safe Learning Environment (CASLE)

www.casle.ca

Everyone benefits from clean air, clean food and clean water

Part III

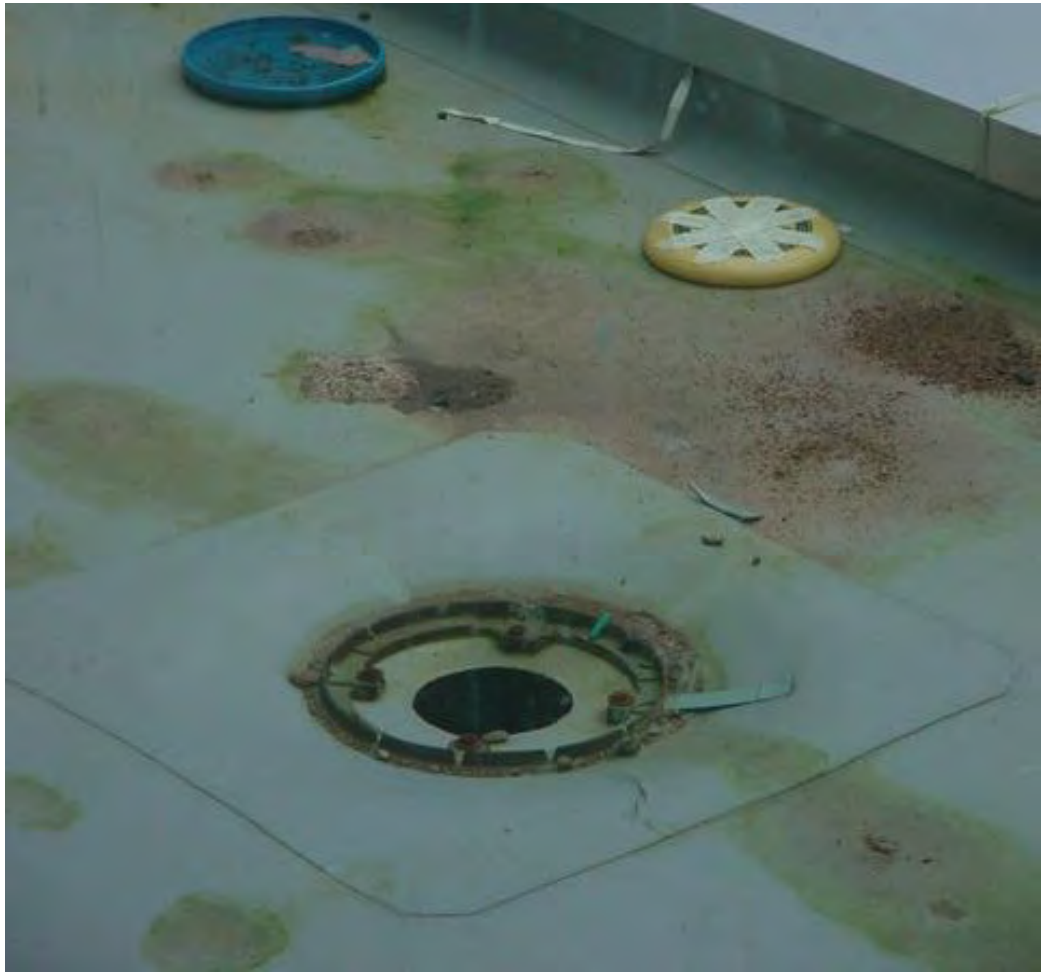
A Quick Virtual Walk-Through…

…a blocked vent

Make sure vents connect to outdoors

an unvented photocopier…

a plugged roof drain…
(builders forgot to install a grille)

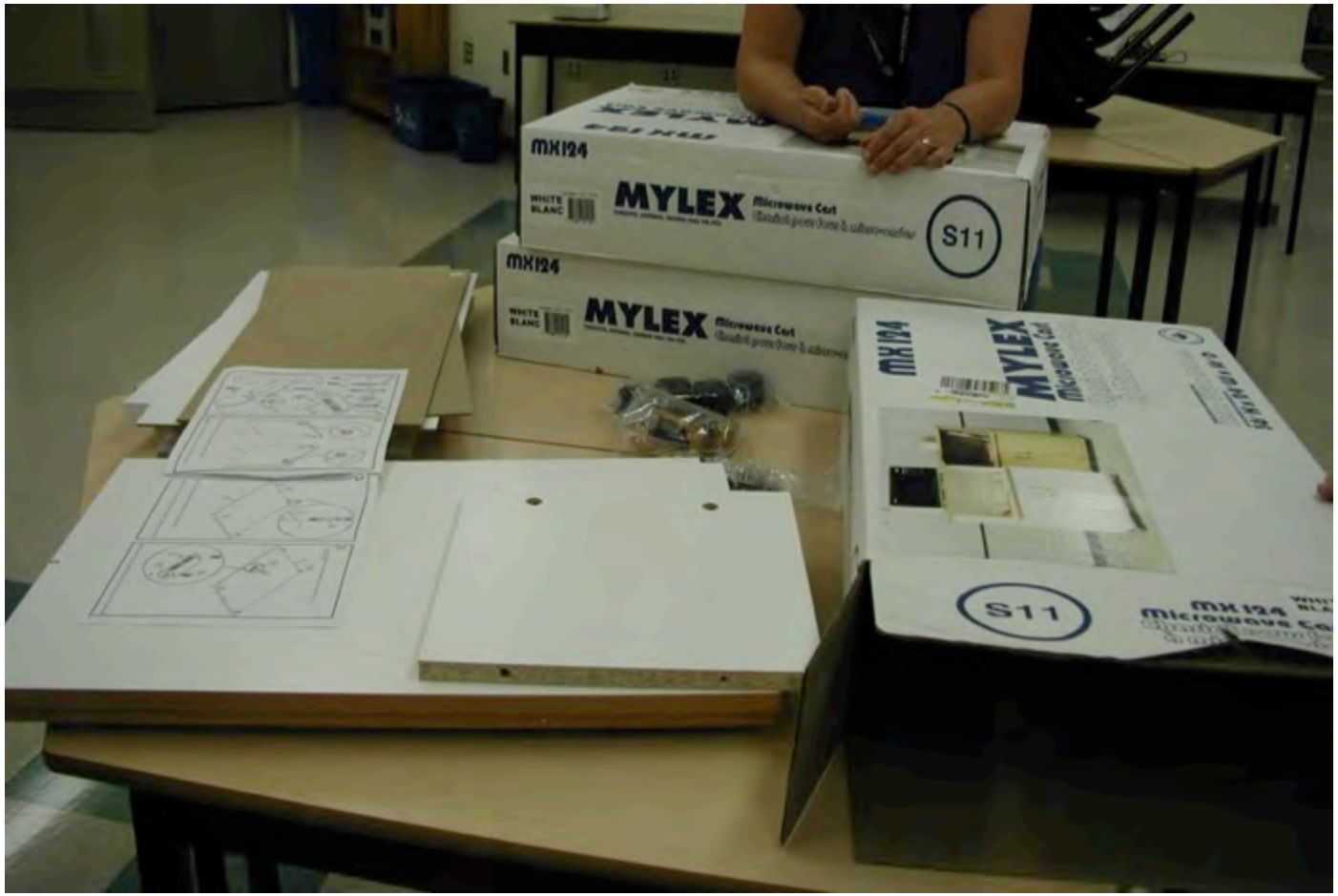


water damaged ceiling tiles indicate a leak…

hidden leaks – a temporary solution becomes permanent?

unapproved cleaning materials containing toxic ingredients…

a solution to one problem creating another?



An office printer that needs ventilation

Part IV

Can new schools be built to avoid health-related problems now and in the future? Yes.

See *Healthy School Design and Construction* and its Appendix at

www.casle.ca

for over 400 action items that help create a Healthy New School

Nova Scotia has been using this guide to build healthy new schools for over a decade.

Examples of proaction for new schools:

- "Benchmark" Healthy New School, Halifax West High School (2003)
- Healthy Building Guidelines added to the province's Design Requirements Manual for all new public buildings since.
- All new schools exceed ASHRAE 62 for indoor air quality.

Success Parameters

- ✓ **Healthy students and staff**
  - At Halifax West, the air was clean on the first day of school.
  - Teachers who became ill at the old Halifax West returned to work at the new school.
  - Teachers report feeling as energetic at day's end as they are when they enter the school.
  - Healthy School features from this school have become part of the Design Requirements Manual for all new Nova Scotian schools, but no school since has had the same success.

- ✓ **Cost effectiveness**
  - Studies show any monies put effectively into improving Indoor Environment Quality pay back within 1.2 to 1.6 years. (renovation) *Tedd Nathanson, Building Air Quality Technology, Public Works and Government Services Canada, 2005*
  - Healthier New schools are being completed on or under budget.

- ✓ **Increased student performance**
  - Researchers have found a 5 to 10 point grade difference between children in good quality buildings verses those in poor buildings.
    Honeywell, Canadian Schoolhouse in the Red.

- ✓ Ventilation exceeds AHRAE guidelines. (100% fresh air, high filtration, oil-free ducts…)

- ✓ Operable windows

- ✓ No gas/propane appliances because schools have inherent maintenance problems that compound risks from gas use

- ✓ gyproc installed off the floor behind baseboard prevents future mould problems

This

Not this

- ✓ Low-emission paints, caulks, ceiling tiles, furnishings…
- ✓ Ideally, an extensive flush-out period for several weeks before occupancy with cabinets open, computers turned on, blinds airing, and ventilation on around the clock

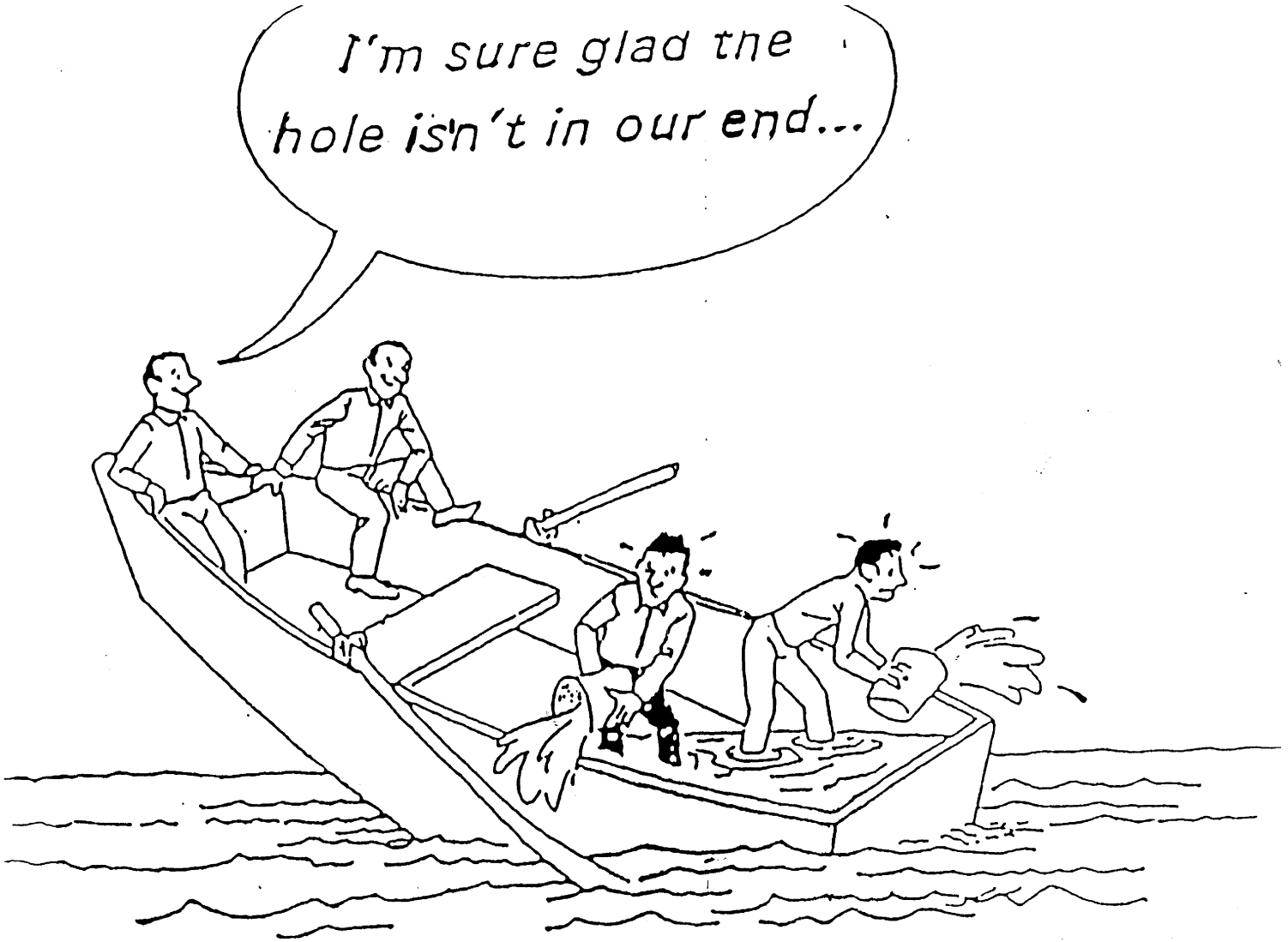
Lockers 9 inches off the floor and well ventilated.

Need quick access to useful school IAQ information?
Go to
www.casle.ca
The main page has buttons for:

"School Administrator's Guide to a Healthy School"

"Guidelines to Accommodate Students and Staff with Environmental Sensitivities"
and
"Tools for Schools Indoor Air Quality Action Kit"

Everyone Can Help



For more information and links on Environmental Illness visit

Canadian Human Rights Commission Policy on Environmental Sensitivities:
http://www.chrc-ccdp.gc.ca/sites/default/files/envsensitivity_en.pdf
and
www.lesstoxicguide.ca

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CASLE

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Canadians for A Safe Learning Environment

is a 23-year-old registered charity with a remarkable record of successful partnering with Provincial, Federal and International governments and agencies, including the NS Departments of Education, Labour, Public Works, and Health, Health Canada, CMHC, and the USEPA to improve the **Condition** of schools and the **Products** and **Practices** used in schools, and to **build Healthy New Schools**.

CASLE has received several awards including a

National Award of Excellence from the

Canadian Institute for Child Health