



Multiple Chemical Sensitivity(MCS) due to passive smoking: A unique Japanese syndrome?

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Multiple chemical sensitivity (MCS)

- Chronic medical condition characterized by symptoms that the affected person attributes to low-level chemical exposure.
- Commonly accused substances include **smoke**, pesticides, plastics, synthetic fabrics, scented products, petroleum products, and paint fumes.

(Wikipedia)

Japanese diagnostic criteria for Multiple Chemical Sensitivity(MCS)

Major manifestation

1. persistent or recurrent **headache** 持続あるいは反復する頭痛
2. **myalgia** or muscle discomfort 筋肉痛あるいは筋肉の不快感
3. persistent **fatigue** or easy fatigability 持続する倦怠感・疲労感
4. **Joint pain** 関節痛

Minor manifestation

1. **throat pain** 咽頭痛
2. mild **fever** 微熱
3. diarrhea, abdominal pain, constipation 下痢・腹痛・便秘
4. **photophobia**, transient scotoma 羞明・一過性の暗点
5. **loss of concentration**, slowed thinking, amnesia 集中力・思考力の低下・健忘
6. agitation, **mental instability**, insomnia . 興奮・精神不安定・不眠
7. **itchy skin**, paresthesia . 皮膚のかゆみ・感覚異常
8. menstrual disorder(e.g.**hypermenorrhea**) . 月経過多などの異常

Laboratory finding

1. myosis 副交感神経刺激型の瞳孔異常
2. decrease in threshold of Spatial frequency characteristics 視覚空間周波数特性の明らかな閾値低下
3. abnormal eye movement 眼球運動の典型的な異常
4. hypofunction of cerebral cortex identified by SPECT SPECTによる大脳皮質の明らかな機能低下
5. positive provocation test 誘発試験の陽性反応

Diagnostic criteria

- 1) 2 major + 4 minor manifestations 主症状2項目 + 副症状4項目
- 2) 1 major + 6 minor + 2 laboratory findings 主症状1項目 + 副症状6項目 + 検査所見2項目

CASE PRESENTATION

Common clinical profiles of passive smoking-MCS victims filing legal action in Japan

1. Workplace with no or incomplete smoking ban
2. Gradually worsening symptoms :headache, dizziness, nausea, cough, runny nose, runny eye, wheals, general fatigue or palpitation.
3. Being sick soon after exposure to non-tobacco smoke or smell (car exhaust, cooking smoke, perfumes, anti-odorants, etc.)
4. Most employers said “you are ***the only*** person to present such symptoms”
5. Job loss(fired or resigned)

Summary of six cases with MCS due to passive smoking

	case症例					
	1	2	3	4	5	6
Age of onset, sex 発病時年齢 性別	36, male	30's, female	30's female	35, male	38, male	30's female
site of passive smoke exposure 受動喫煙場所	Indoor office	Indoor office	Indoor office	Indoor office	Office car	Indoor office
Mode of onset (Gradual, Acute) 発症様式	G	G	G	G	A	G
Treatment/Prognosis (Work site change, Sick leave, Resignation) 治療・予後(配転・休職・辞職)	W	S → R	W → S → R	R	W	W → R
Litigation outcome/ Compensation 訴訟結果/賠償額	Won \$500	Settlement \$8,000	Pending	Settlement \$70,000	Pending	Pending

Common clinical profiles of Japanese passive smoking-MCS cases

- No history of mental disorder 発病前のうつ病・精神疾患なし
- Never smoking before the onset of MCS 発病前の能動喫煙歴なし
- No induction of adverse symptoms due passive smoking before the onset of MCS 発病前の受動喫煙による体調悪化なし
- Amelioration of symptoms during holiday休業日に症状が軽快
- Relapse of symptoms by office re-visiting 再出勤で症状が再発
- Induction of symptoms by small amount of passive smoke exposure 発病後、低濃度の受動喫煙でも症状発生・悪化
- Symptoms triggered by non tobacco smoke or perfume 発病後、タバコ煙以外の煙・臭気でも体調不良

DISCUSSION

Pubmed:

multiple chemical hypersensitivity 926

chemical hypersensitivity + passive smoking 22

multiple chemical hypersensitivity + passive smoking 5

The Health Consequences of Involuntary Exposure to Tobacco Smoke

A Report of the Surgeon General



Department of Health and Human Services

SGR Report 2006 concluded that passive smoking causes odor annoyance, nasal irritation, cough, wheeze, chest tightness, and difficulty breathing, etc, **but not MCS.**

Chapter 9. Respiratory Effects in Adults from Exposure to Secondhand Smoke

Odor and Irritation

1. The evidence is sufficient to infer a **causal** relationship between secondhand smoke exposure and **odor annoyance**.
2. The evidence is sufficient to infer a **causal** relationship between secondhand smoke exposure and **nasal irritation**.
3. The evidence is suggestive but not sufficient to conclude that persons with nasal allergies or a history of respiratory illnesses are more susceptible to developing nasal irritation from secondhand smoke exposure.

Respiratory Symptoms

4. The evidence is suggestive but not sufficient to infer a causal relationship between secondhand smoke exposure and acute respiratory symptoms including cough, wheeze, chest tightness, and difficulty breathing among persons with asthma.
5. The evidence is **suggestive** but not sufficient to infer a causal relationship between secondhand smoke exposure and acute respiratory symptoms including **cough, wheeze, chest tightness, and difficulty breathing among healthy persons**.
6. The evidence is suggestive but not sufficient to infer a causal relationship between secondhand smoke exposure and chronic respiratory symptoms.

In general population,

12.6% reported a hypersensitivity.
Of these, 13.5% lost their jobs.

(A randomized population study conducted by
Caress and Steinemann. Environmental Health
Perspectives 2003;111(1):1490-1497)

The most common triggers of MCS symptoms were

cleaning products (88.4%)

tobacco smoke (82.6%)

perfume (81.2%)

pesticides (81.2%)

car exhaust (72.5%)

(Caress SM et al. Symptomatology and etiology of multiple chemical sensitivities in the southeastern United States. Arch Environ Health. 2002 Sep-Oct;57(5):429-36.)

Are there passive smoking victims presenting MCS symptoms in your country?

If so, I would like to share how they suffer and fight this devastating condition.

CONCLUSION

1. Passive smoking in the workplace *does* often cause MCS in Japan.
2. Many passive smoking-MCS litigations have been filed in Japan, but most MCS victims lost their job and health.
3. Further clinical research is needed on passive smoking-MCS problem.
4. MCS should be added to the list of disorders due to passive smoking.