

Mc GORMICK (H.G.)

THE EFFECT OF THE LOCAL APPLICATION OF  
GUAIACOL IN THE REDUCTION OF THE  
TEMPERATURE IN TYPHOID FEVER.

BY

H. G. MCCORMICK, M.D.,  
OF WILLIAMSPORT, PA.



FROM  
THE MEDICAL NEWS,  
January 19, 1895.



[Reprinted from THE MEDICAL NEWS, January 19, 1895.]

**THE EFFECT OF THE LOCAL APPLICATION OF  
GUAIACOL IN THE REDUCTION OF THE  
TEMPERATURE IN TYPHOID FEVER.**

BY H. G. McCORMICK, M.D.,  
OF WILLIAMSPORT, PA.

IN a conversation I had last spring with Dr. J. Solis-Cohen regarding a case of pulmonary tuberculosis with a high temperature, he suggested the use of guaiacol locally applied for its reduction as a remedy that had proved useful in his hands.

When I entered upon my term of service as attending physician to the Williamsport Hospital, the first of September last, I determined to give this remedy a good and fair trial in the reduction of temperature in typhoid fever. I had it applied 230 times in the hospital and 43 times in private cases, making 273 times it was applied under my direction in three months. These applications were made to 12 different persons, 7 males and 5 females, making an average of about 24 applications to each person. The greatest number of times it was applied to any one person was 70, and the least number of times it was applied was once; the largest dose used was 25 drops, and the smallest dose used was 2 drops; the greatest reduction of temperature was from  $106.8^{\circ}$  to  $101^{\circ}$ , by the application of 5 drops, in the case of Mrs. Horton, with a corresponding



reduction of the pulse from 136 to 110 per minute. Again you will notice in the same case, by applying 5 drops on the same day when the temperature was  $106.2^{\circ}$ , with a pulse of 148, it was reduced in one hour to  $102^{\circ}$ , and the pulse to 120 per minute. This patient, as you may see by consulting the special reports, was unusually susceptible to the action of this drug, as the application of 2 drops when the temperature was  $103^{\circ}$  and the pulse 130, in one hour and thirty minutes reduced the temperature to  $100.4^{\circ}$  and the pulse to 120, while in the case of James Hill 20 drops were required to reduce the temperature from  $104^{\circ}$  to  $98.4^{\circ}$  in three hours and fifteen minutes.

I show you a large number of special reports of the cases in which guaiacol was applied, and which may be useful in showing not only its effect on the temperature, but also the effect on the pulse and respiration. You will observe that within thirty minutes after the application there was a fall in the temperature, and in most cases there was a corresponding reduction in the number of heart-pulsations per minute. The method of application was as follows:

The right iliac region was thoroughly cleansed with soap and water, and, after being dried, the guaiacol was slowly dropped upon the part and thoroughly rubbed in with the hand for from ten to fifteen minutes. The part was then covered with oiled silk. The only preparation used was that prepared by Merck, and it did not fail in a single instance to produce the desired result. Any other point would probably be as good for its application, but as it was as near the seat of the disease as I could

possibly get, and the ease with which it could be reached and covered with the oiled silk without in any way disturbing the patient, made me select this point for its use.

The effect of guaiacol lasts from three to four hours, and the more often it is used the greater the effect. I observed a number of chills from the sudden reduction of temperature, but after I became more accustomed to its use the chills were much less frequent. If it can be avoided, the temperature should not be reduced below  $100^{\circ}$ , which can easily be regulated after the applications have been made a few times, care being taken to commence with a small dose, say 10 or 15 drops. I have never found it necessary to use the large doses of 40 or 60 drops as employed by Dr. DaCosta.

It has been suggested that by this rapid reduction of temperature there is danger of producing congestion of some of the internal organs of the body. I have not seen a single unfavorable symptom (except the occasional chill) follow its use.

All of my cases recovered. There was but one case of pneumonia-complication, and this could in no wise be attributed to the guaiacol, as it came on six days after the last application had been made. Sweating nearly always followed the application, being more severe when the reduction of temperature was sudden than when it was more gradual. No marked depression followed; the pulse was lessened in frequency and decidedly improved in strength.

No irritation of the skin followed when the guaiacol was used alone, and patients never objected to its use. The disagreeable odor that has been

described by some as being objectionable to patients was never referred to by but one, and then only on the first application.

I used guaiacol and eucalyptol combined in the proportion of one of the former to two of the latter a number of times, but believe I had better results with the guaiacol alone. Besides, eucalyptol produces decided irritation of the skin, and in no way adds to the efficacy of the guaiacol.

This drug when applied to a person having a normal temperature produces no effect either upon the general condition of the individual or upon his temperature, as shown by an appended chart.

When I was following these investigations I had no knowledge of guaiacol having been used locally for the reduction of temperature in typhoid fever, but on looking over the literature of the subject I found that Dr. DaCosta used it in a few cases in the Pennsylvania Hospital last spring.

It is asserted by therapists that guaiacol is eliminated by the lungs and kidneys. In my cases treated with it repeated examinations of the urine were made by the resident physician, with negative results so far as the finding of the drug was concerned. It was at times noticeable on the breath.

In the carrying on of these investigations I received material aid from Dr. H. C. Frontz, resident physician, to whom I wish to return my thanks.

In summing up this question I feel convinced of the following facts :

1. That guaiacol when locally applied is certain to reduce temperature.

2. That with the care that a physician should always use in the administration of drugs, it is absolutely safe.

3. That chills will not occur if the temperature is not reduced below  $100^{\circ}$  Fahrenheit.

4. That no deleterious effect is produced upon any of the organs by its use.

5. That it is easy to apply, and can be used by any one competent to nurse a typhoid-fever case.

6. There are no depressing effects following an intelligent use of the drug.

7. That by continued use the dose can be gradually lessened.

8. That it is far superior to the cold bath; that it can be used by one person; that no appliances are necessary for its use that are not obtainable in every house; that it is much more pleasant to the patient; that it is fully as effective; that patients are not subjected to the danger of moving, and they offer no resistance to its use.

I have thoroughly tried the bath and cold packs, and I know they have proved very efficacious in many cases, but with my experience with guaiacol I have no desire to return to either of them.

## SPECIAL REPORT.

Patient.	Date.	Hour.	Pulse.	Temp.	Resp	Guaiacol.	
Mrs. Horton	Nov. 27	4.00 P.M.	120	104.2	24	gtt. xv.	
		4.30	122	103.6	34		
		5.00	114	99.8	34		
		6.00	92	99	34		
	Nov. 28	1.00 A.M.	120	105.2	30	gtt. x.	
		2.30	110	101	30		
		3.00	100	100	28		
		7.00	126	103.6	30	gtt. x.	
		7.30	114	102	26		
		8.15	108	99	26		
		9.00	had a chill.				
		9.30	138	106	36	gtt. v.	
		10.15	130	104.4			
		10.35	120	103.1	32		
	11.15	120	101.6	30			
	12.00	very severe chill lasting $\frac{1}{2}$ hr.					
	Nov. 29	12.45	136	106.8	...	gtt. v.	
		1.00	136	106	36		
		1.30	128	104.6	32		
		2.00	118	102.6	30		
		2.45	110	101	28		
		9.45	144	107	40	gtt. v.	
		10.20	132	104.2	30		
	10.50	132	102.2	32			
	Nov. 30	12.40 P.M.	148	106.2	40	gtt. v.	
		1.15	134	103	36		
		1.45	120	102	30		
	Dec. 12	7.00	120	103	26	gtt. ij.	
		7.50	120	101.6	26		
	Dec. 14	9.15 A.M.	130	103	30	gtt. ij.	
		10.45	120	100.4	28		

## TRIAL REPORT (with normal temp.).

Patient.	Date.	Hour.	Pulse.	Temp.	Resp	Guaiacol.
Mike McGinly	Dec. 14	3.15 P.M.	64	98	22	gtt. xv.
		3.45	64	97.8	20	
		4.15	62	98	18	
		4.45	63	98.2	20	
William Scott	Dec. 4	8.45 P.M.	144	106	26	gtt. xx.
		9.25	129	103.6	26	
		10.00	124	102	26	
		10.45	124	101	24	
	Dec. 21	7.20	112	102	24	gtt. viij.
		8.10	100	98.6	24	
Emma Lover	Oct. 1	9.00 P.M.	126	103.8	....	gtt. xx.
		9.30	118	103		
		10.00	118	101		
		10.30	114	100.4		
	Oct. 2	3.00 A.M.	120	103.6	....	gtt. xx.
		3.30	102	102		
		4.00	100	101.2		
		4.30	104	100.8		
		8.00 P.M.	118	103	....	
		8.30	110	101.6		
9.00	108	101				
9.30	110	101				

## SPECIAL REPORT.

Patient.	Date.	Hour.	Pulse.	Temp.	Guaiacol.
James Hill	Sept. 24	2.00 P.M.	100	103.4	gtt. xxv.
		2.30	96	102.8	
		3.00	96	101.2	
		3.30	94	99.4	
		4.00	94	99.4	
		4.30	92	99.4	
		5.30	90	100.6	
		6.00	100	104	
		6.30	106	103.8	
		7.00	100	102.8	
		7.30	104	101	
		8.00	90	101	
		8.30	100	100	
		9.15	117	98.4	

SPECIAL REPORT.

Patient.	Date.	Hour.	Pulse.	Temp.	Guaiacol.	
James Hill	Sept. 30	7.15 P.M.	96	103.4	gtt. xxiv.	
		7.45	100	103.6		
		8.15	107	101.8		
		8.45	104	101.8		
		9.15	97	100.6		
		11.00	106	104		
		11.45	112	105		gtt. xxv.
		12.00	98	102.4		
		12.30	102	100.3		
		1.00	92	101.8		
		1.30	92	100		
		9.30 A.M.	106	103.8		
	10.00	100	102.4			
	10.30	100	101.6			
	11.00	100	101.4			
	11.30	100	101.4			
	12.00	96	100.8			
	1.00	92	101.6			
	4.00 P.M.	100	103.6			
	5.45	100	103.6	gtt. xxv.		
	6.15	100	103.4			
	7.00	100	100			
	7.45	80	98			
	10.00	90	100			
	12.00 A.M.	96	103.8		gtt. xx.	
	12.30	120	112			
	1.00	118	102			
	2.00	...	99.2			
	3.00	90	98.8			
	6.00	97	100			
	8.00	100	100.6	gtt. xx.		
	5.00 P.M.	100	104			
	6.30	100	102			
	8.00	86	101	gtt. xx.		
	6.45 A.M.	103	103			
	7.15	100	100.2			
8.00	100	98.4				
10.00	100	99.4				
1.30 P.M.	114	104.2	gtt. xx.			
2.15	106	101.2				
2.45	106	100.2				
3.15	100	100.6				
3.40	100	100.2				
10.45	100	103.6				
11.15	108	101.6	gtt. xx.			
11.45	109	100				
8.30	110	103.2				
9.15	110	102				
10.00	112	100				
10.45	112	98.4				
11.30	113	99				

## SPECIAL REPORT.

Patient.	Date.	Hour.	Pulse.	Temp.	Resp	Guaia- col.	Euca- lyptol.	
Miss Saxton	Sep. 30	7.15 P.M.	130	104	...	gtt.	...	
		7.45	126	101	...	xxv.	...	
		8.15	128	101.2	...	...	...	
		8.45	118	101	...	...	...	
		11.15	120	103.6	...	gtt.	...	
		11.45	116	102.4	...	xxv.	...	
		12.15	118	101	...	...	...	
		12.45	122	100	...	...	...	
		Oct. 1	9.45 A.M.	120	103	...	gtt.xx.	...
			10.15	120	102	22	...	...
			10.45	120	102	28	...	...
			11.15	120	104.8	26	...	...
	12.45 P.M.		120	104	...	gtt.xx.	...	
	1.15		122	104	...	...	...	
	1.45		116	102	...	...	...	
	2.15		112	99.4	...	...	...	
	4.30		124	99.4	...	...	...	
	6.45		125	103.6	...	gtt.xx.	...	
	7.15		120	102.2	...	...	...	
	7.45		110	101	...	...	...	
	8.15	106	99.2	...	...	...		
	Oct. 2	1.30 A.M.	126	104	...	gtt.xx.	...	
		2.00	124	103	...	...	...	
		2.30	112	101	...	...	...	
		3.00	116	102	...	...	...	
		3.00 P.M.	120	103.6	...	gtt.xx.	...	
		3.30	120	103.6	...	...	...	
		4.00	...	101.8	...	...	...	
		4.30	124	101.2	...	...	...	
		5.00	120	100.2	...	...	...	
		6.00	...	99.2	...	...	...	
		Oct. 3	10.00 A.M.	110	102	...	gtt.xv.	...
			11.00	125	101.6	...	...	...
	11.30		120	101	...	...	...	
	12.00		125	101.4	...	...	...	
	5.00 P.M.		126	102.6	...	gtt.xv.	...	
	5.30		120	102.6	...	...	...	
	6.00		120	101.4	...	...	...	
	6.30		116	101	...	...	...	
	7.00		110	101	...	...	...	
	11.00		126	103.2	...	gtt.xx.	...	
	11.30		126	103.2	...	...	...	
12.00	120		102	...	...	...		
2.00	104	100.8	...	...	...			
3.30	112	99	...	...	...			

## SPECIAL REPORT.

Patient.	Date.	Hour.	Pulse.	Temp.	Resp	Guaia- col.	Euca- lyptol.
Miss Saxton	Oct. 6	90.0 P.M.	120	104.2	...	...	gtt.xx.
		9.30	116	103.2			
		10.00	112	102			
	Oct. 7	10.30	108	101			
		5.45 A.M.	122	106	...	...	gtt.xx.
		6.15	120	103			
		6.45	116	102.6			
	Oct. 8	7.15	112	101.2			
		5.30 P.M.	118	103.6	...	...	gtt.xx.
		6.00	100	102.1			
		6.30	118	102			
		7.00	110	102			
		7.30	112				
		8.00	120	103.6	...	...	gtt.xx.
		8.30	120	103			
		9.00	118	102.6			
		9.30	110	101			
		11.00	126	104	...	...	gtt.xx.
		11.30	124	103.8			
		12.00	116	102			
		12.30	112	101			
		Oct. 9	9.00 A.M.	114	103.4	...	...
	9.30		112	102.8			
	10.00		112	101.4			
	10.30		110	101			
	11.00		100	100			
	11.30		100	99			
	12.00		98	98.6			
	12.30		96	98.4			
	7.00 P.M.		112	103.4	...	gtt.xx.	gtt. x.
	7.30		110	102			
	9.00		123	104.6	...	gtt.xx.	gtt. x.
	9.30		120	104			
	10.00	114	103				
	10.30	110	102.6				
	Oct. 10	8.20 A.M.	120	103	...	gtt. x.	gtt.xx.
		3.40	116	102.4			
		4.20	114	102			
		4.40	112	101.2			
		2.30 P.M.	120	103	...	gtt. x.	gtt.xx.
		3.00	104	101.4			
		3.30	102	90.2			
4.00		106	98.6				

## SPECIAL REPORT.

Patient.	Date.	Hour.	Pulse.	Temp.	Resp	Guaia- col.	Euca- lyptol.
Miss Saxton	Oct. 10	4.30 P. M.	104	98.2			
		5.00	100	98			
		5.30	84	97.4			
		9.30	120	103.6	...	gtt. x.	gtt.xx.
		10.00	116	102			
		10.30	112	101.6			
		11.00	114	100.4			
	Oct. 11	11.00 A.M	118	103	...	gtt. x.	gtt.xx.
		1.30	118	102.4			
		2.00	112	101			
		2.30	110	100.4			
		3.00	100	99			
		4.00	92	98			
		5.20	90	97.4			
W. Edwards	Oct. 6	6.30 A.M.	96	101.2			
		7.00	84	101.2			
		2.00 P.M.	96	103.6			
		2.30	96	102.8			
		6.30	98	104.4	...	gtt.xx.	...
		7.00	90	102.4			
		8.00	86	101.8			
	Oct. 7	5.15 A.M.	80	103	...	gtt.xx.	...
		5.45	96	101.6			
		6.15	105	100.4			
		6.45	105	99.6			
		5.15 P.M.	110	104.4	...	gtt.xx.	...
		5.45	108	103.8			
		6.15	100	101.2			
		6.45	96	100			
		11.15	120	104.6	...	gtt.xx.	...
		11.45	112	104			
		12.15	90	101.8			
		1.06	90	99.6			
		2.00	90	99.6			
	Oct. 8	4.00	120	104	...	gtt.xx.	...
		4.35	90	103			
		5.00	90	101.4			
		5.05	88	101			
		5.45	110	98.2			
		6.45	90	99.2			
		10.00 P.M.	120	104.2			
11.00		100	101.6				
4.00		120	105.2		gtt.xx.	...	

## SPECIAL REPORT.

Patient.	Date.	Hour.	Pulse.	Temp.	Resp	Guaia- col.	Euca- lyptol.
W. Edwards	Oct. 8	4-45 P. M.	110	101.8	...		
		8-45	100	104	...	gtt.xx.	...
		9-15	95	103-4			
		9-45	100	101.8			
		10-15	108	100.6			
		10-45	110	100.4			
	Oct. 9	2-30 P.M.	130	104.2	...	gtt.xx.	...
		3-15	112	102.8			
		3-45	115	101.8			
		4-15	112	100.2			
	Oct. 11	6-00 P.M.	108	103	...	gtt. x.	gtt.xx.
		6-45	112	104.6			
		7-15	108	104.4			
		8-00	108	104.6			
	Oct. 12	3-45 P.M.	120	103	...	gtt. x.	gtt.xx.
		4-15	118	101			
		5-00	124	99			
		6-00	110	97.8			
		2-00	108	103	...	...	gtt.xx.
		2-30	102	101			
		3-00	118	102.8			
		4-00	108	103.2	...	...	gtt. xxv.
		5-00	110	103.2			
		5-30	110	103.2			
		8-15	120	103	7.15	...	gtt.xx.
		10-45	109	103		gtt. x.	gtt xx.
		11-15	100	103			
	Oct. 13	12-00 P.M.	100	100.8			
		1-00	110	98			
		6-00	132	96-4			
		9-30 A.M.	117	103-6	...	gtt.xx.	gtt.xx.
		10-05	120	103			
	Oct. 14	10-45	112	102			
		2-00 A.M.	120	103	...	gtt.xx.	gtt. x.
		3-00	118	101.4			
		3-45	108	101.4			
		4-00	116	102			
		6-00	110	102	..	gtt. x.	gtt xx.
		6-30	100	101.2			
		7-00	104	101.8			
		7-30	108	101.2			
		5-30	108	103	...	gtt. x.	gtt.xx.
8-00	108	102.8					

## SPECIAL REPORT.

Patient.	Date.	Hour.	Pulse.	Temp.	Resp	Guaia- col.	Euca- lyptol.
W. Edwards	Oct. 14	9.45 P.M.	107	103.4	...	gtt. x.	gtt.xx.
		10 45	120	102			
	Oct. 15	4.00 A.M.	108	103.2	...	gtt.xx.	...
		5.15	108	103.2			
		5.45	108	103			
		6.15	102	100.8			
		6.45	102	98.8			
		8.00	98	97.2			
	Oct. 16	3.00 P.M.	117	103	...	applied	
		4.00	116	100			
		5.00	108	98			
		3.45 A.M.	102	103	...	gtt.xx.	...
		4.23	120	101.8			
		6.00	120	99.6			
		8.00	124	99			









*The Medical News.*

*Established in 1843.*

A WEEKLY MEDICAL NEWSPAPER.

*Subscription, \$4.00 per Annum.*

---

---

*The American Journal*  
OF THE  
*Medical Sciences.*

*Established in 1820.*

A MONTHLY MEDICAL MAGAZINE.

*Subscription, \$4.00 per Annum.*

---

COMMUTATION RATE, \$7.50 PER ANNUM.

---

LEA BROTHERS & CO.  
PHILADELPHIA.