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Watson W (1768). An account of a series of experiments, instituted with a view of ascertaining the most successful method of inoculating the smallpox. London: J Nourse.

Title pages

A N
A C C O U N T
O F A
S E R I E S o f E X P E R I M E N T S,
Instituted with a View of ascertaining the
M O S T S U C C E S S F U L M E T H O D
O F
I N O C U L A T I N G T H E S M A L L - P O X .

By WILLIAM WATSON, M. D.

Fellow of the Royal Society, one of the Trustees of the
British Museum, and Member of the Royal College of
Physicians,

Η Πείρα ε' σφαλής.

L O N D O N ,

Printed for J. Nourse, Bookseller to His MAJESTY.

MDCCLXVIII.

I was very desirous of knowing what it was, in the whole regimen, that chiefly contributed to lessen the disease; particularly, what share the kind of variolous matter had in the success: whether it depended upon its being taken from the natural or inoculated small-pox; and then, whether in its watery, or in its purulent state. It would be a desirable thing likewise, when the variolous matter
 inserted

inserted and every other circumstance was the same, to observe what effect mercurial medicines or purges had, when given as preparatory. Nothing hitherto had been done in a comparative view, which, while practitioners continue in the same track, cannot be expected. An investigation of this sort therefore, which very few physicians are in a situation of making, I considered as of no small importance. I resolved, therefore, to put in practice several of the methods that had been used with success, together with some others which promised to be equally secure; to the end that if any one method was by experience found to answer better than the others, it might be adopted.

I had found, though the same preparation I had used for several years was continued, yet that keeping the patients less in bed, and more exposed to the cool and open air, the disease was less severe; the variolous pustules
 were

were fewer in number, infomuch that they were very rarely blind: to say nothing, that at the end of the distemper they were less enfeebled. I determined to try, therefore, what medicines of different kinds, under the same regimen, would produce: besides, as lord Bacon suggests, *Inveniendum est, quid natura faciat, vel ferat*: It was proper also to be informed of what nature unassisted, not to say undisturbed, would do for herself. This was not to be done, but where a number of persons of both sexes were inoculated at the same time and place, in the same manner, with the same variolous matter, and observing equally the same regimen. The only difference then was to consist in their medical treatment.

October 12, 1767, I directed thirty-one persons to be inoculated. Their ages, as well as those of the subsequent observations, were from six to eleven or twelve. Ten were girls,
and

and twenty-one boys. They were all inoculated with variolous matter, taken in its ichorous or watery state, from a person who had the disease in what is called the natural way. Each had two slight punctures in the left arm, made with the point of a lancet, dipped in, and slightly moistened with, this matter; and no plaster was put over them. The lancet, in making these punctures, was obliquely directed, that the matter might be inserted between the cuticle and skin. They had all abstained from animal food ten days before the punctures were made, which they did likewise during the course of the disease. Their diet was milk, and divers preparations of vegetables; and their drink toast and water, except now and then a draught of wine whey, when it was indicated. If any of them coughed to a degree worth taking notice of, they drank infusion of raisins. When the weather was favourable, they were, both during the preparation and course of the disease,
frequently

frequently in the open air. Hitherto in every particular the treatment was the same; if, therefore, any difference should arise during the course of the subsequent disease, it must be accidental or constitutional, and not owing to diet or difference in their general regimen.

Of these thirty-one persons, five boys and five girls, by way of preparation, took a powder, consisting of twelve grains of jalap and four of calomel. This powder was taken twice before the insertion of the variolous matter, and once after. No other medicine was used as preparatory.

Of the five boys, four had the small-pox in a very slight degree; of the fifth, the punctures inflamed but little; and though he was inoculated a second time twelve days after, he had no eruption. The second punctures continued red several days; but neither
sickness

sickness nor pustules succeeded. One only of these boys was in the least disordered during the whole course of the disease, and he complained of the head-ach, for a day or two preceding the eruption. These boys had only fifty-four pustules among them; not fourteen each.

Of the five girls, four had the eruption without any previous or attendant disorder. The punctures of the fifth inflamed, and had large red margins; an argument of the contagion having taken place; and were succeeded by only two pustules, which were so very small, and dried away on the second day after their appearance, that I could not depend upon them as variolous. She was therefore sixteen days after inoculated again; but these punctures healed very soon, and nothing succeeded. The four girls had only eighteen pustules among them; not five to each.

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The most that any boy had was twenty-five, the least had four. The most that any girl had was six, the least had three.

It must here be observed, that in this and the subsequent account, the pustules were numbered by the attendants when they were nearest maturity, in every part of the body, the scalp excepted; where, on account of the hair, their number could not be ascertained. The pustules arising from the punctures and about them were never reckoned among the others.

Five boys and five girls under the same regimen with the former, took each of them two purges of infusion of senna and syrup of roses, before the punctures were made, and one four days after. No other medicine was used as preparatory. Not one of these complained of sickness, or other disorder, during the whole course of the disease. Eight of them had variolous
1 pustules.

pustules. One of the girls, though the punctures inflamed, had no eruption. She was then inoculated again, but the second punctures were not visible after a day or two. One of the boys had likewise the punctures inflamed to a considerable degree, but no eruption followed. These eight had sixty-six pustules among them, of whom one, who had most, had thirty. Two of the girls had only two pustules each. At a medium, each had little more than eight pustules.

Eleven boys under the same circumstances with the former, were inoculated without any medical preparation. Of these, previous to the eruption, five complained of head-ach, two of which were slightly feverish. One of these last, though the punctures inflamed, and had a large red margin round them two inches in diameter, had no eruption; and when punctured a second time, a fortnight after, it had no effect. Another, who
C 2 had

had no feverish symptoms, though the punctures inflamed, had no eruption, and was inoculated a fortnight after without effect. The other nine went through the disease perfectly well, and had among them two hundred and eighty-eight pustules; which, reduced to a medium, is thirty-two each. It is here to be observed, that one of these had near two hundred pustules; and three of the others only seven among them.

Except three purges at the decline of the disease, and what was considered as preparatory, none of these thirty-one persons took any medicine during the course of it.

November 1, fourteen boys and nine girls were inoculated under the same continuance of vegetable diet, and abstinence from animal food as the former. Those before mentioned were inoculated with variolous matter, in its thin or ichorous state, from the pustules of the natural small-pox: but
these

these were infected with purulent matter taken from the pustule of the inoculated small-pox. Of these, four boys and four girls took each of them thrice, as in the former inoculation, four grains of calomel without any addition: as it might be presumed that in the former manner of giving it, this mercurial preparation had not its full effect, on account of its being joined with, and carried off hastily by, a purging medicine; it was therefore left to itself, and it generally went off gently by stool. Each of these eight had variolous pustules. Three of the girls and one of the boys had sickness and slight head-ach before the eruption; the last, during this sickness, voided five worms by stool. The number of pustules among the eight amounted to five hundred and seventy-six, viz. seventy-two to each. Of these, one girl had four hundred and forty pustules; but she was no otherwise disordered during the whole illness, than with a slight
head-

head-ach, without feverish heat, on the two days preceding the eruption. One boy had only seven pustules.

At the same time with the former, in the same manner, and with the same matter, four boys and four girls were inoculated. These took no mercurial preparation, but only two doses of infusion of senna and syrup of roses twice before the punctures were made, and once after. Of these eight, one boy only complained of an head-ach one day, which went off upon the eruption of the pustules. They all had variolous eruptions. The number among these eight amounted to two hundred and fifteen; nearly twenty-nine to each. Of these, that patient who had the most, had sixty-four; the least three. One of these boys, who had eighteen pustules, after they were ripe and in a state of decline, had an imposthuration under his chin, which broke of itself, under a pultice of bread and milk, and healed in a few days.

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The above sixteen, as well those who took calomel during the preparation, as those who took the other purging physic, had also three doses of infusion of senna and syrup of roses when the disease was over. No other medicine was taken.

The remaining six boys and one girl, who were under the same circumstances likewise inoculated at this time, took no medicine, either preparatory, during the course of the disease, or after it; except their abstaining from animal food, they were treated in the manner recommended by the ingenious Dr. Gatti, who sometime since inoculated a considerable number at Paris, and whom I frequently saw while he was in London. Two of the boys complained of a slight head-ach the day before the eruption; they all had variolous pustules; and the number among them amounted to one hundred and twenty-five; not quite eighteen to each.

each. He who had most, had sixty; the least, two: the girl had only three. Though none of these, as I before mentioned, took any purging medicine, at the decline, or after the disease; they, nevertheless, continue perfectly well. In about twenty days from the punctures being made, not to mention here that each puncture generally became a variolous pustule, and maturated always before the rest, the external inflammation attendant on them had entirely subsided, and nothing remained on the punctured parts but a dry scale, which easily came off of itself.

I before mentioned, that in the first of the two above recited inoculations, the variolous matter was taken from the natural small-pox, when in a watery state: in the second, the matter made use of was from the inoculated small-pox, when purulent. On November 24, twenty were inoculated under the same circumstances of diet, cool
air,

air, and every thing else; the variolous matter was that from inoculation, and in its perfectly concocted state. It was taken from the inside of the hand of a strong hard-skinn'd boy, where two or three pustules remained after the rest were dry. The matter was perfectly white, and as viscid as cream. I was desirous of being informed, whether the effects of this would be different from what had been first employed, either in the punctures or eruptions. Of this number, ten were boys, and ten girls. Fifteen of these had been twelve days without animal food, before the punctures were made; five were inoculated after only three days abstinence. They took no medicine, either preparatory, or during the course of the disease. Of these, one boy and one girl, though the punctures inflamed and were turgid, had no eruption; and when fresh punctures were made a fortnight after, they did not inflame, and were scarce visible the third day after they
D were

were made. The boy was one of those who had abstained three days only from animal food.

The other eighteen had variolous pustules. Five of the boys and two of the girls complained of head-ach and sickness of stomach before the eruption; the rest had no complaints. The number of pustules among them amounted to one thousand and twenty: not quite fifty-seven each. The greatest number either of them had was two hundred and sixty; the least had only two, exclusive of those occasioned by the punctures. Three had only four pustules each. He that had the greatest number, was not one of those who had been three days only from animal food. The pustules among these four amounted to two hundred and ninety-three; something more than seventy-three to each: though one of these had only four pustules. She who had most, had one hundred and sixty-eight.

The

The whole eighteen went through the disease without any thing worthy of remark, except one of the boys, who had been three days only kept from animal food. Though he had ninety-three pustules, he became somewhat feverish two days after the maturation of the pustules. This was followed by a painful inflammatory swelling upon the shoulder, which disappeared intirely in a few days, upon the application of a common pul-tice, and taking some purges of infusion of senna.

The punctures of all those in the former inoculation dried away, as I before mentioned, in a few days after the maturation of the pustules; though the patients, some of them, took no purging medicine after the decline of the disease: but in the last inoculation, where matter highly concocted was employed, in four of the boys and three of the girls, the punctures remained turgid and red, after the va-

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riolous

riolous pustules were dried away. To these, and to these only, some purges were given; during the taking of which, the punctures healed and scaled off. Neither of these, were of the number of those who had, prior to their being punctured, abstained three days only from animal food.

Of the seventy-four persons, whose histories I have here related, though inoculated with variolous matter in different states; though prepared in so different a manner; and a great many no otherwise prepared than by abstinence from animal food; not one of them was disordered enough, during the whole process, to occasion the least anxiety for the event. Not one of them had, from the pustules being upon the eyelids or near them, their eyes closed a single day; none continued in bed an hour longer than they would have been in their best health. None of them had any tumour under the armpit, much less an abscess there, which

which in the former method of inoculating was too often seen. No plaster was used to any of them, as I had long since found it to answer no other purpose than to disguise the appearance of the punctures. As in a few of them, half a dozen perhaps, the punctures spread, and were sore about the time, or soon after the maturation, a pultice of bread and milk answered effectually every purpose of outward application.

When it did not rain, or the weather was otherwise unfit, they were out every day, during the whole process, in a field near the infirmary where they were inoculated, where nobody else resorted.

There did not happen to any of these, what I have sometimes observed in delicate adults and weakly children when under inoculation, viz. that after the febrile state has been over, and the eruption been complete, by