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SUPPLEMENTARY FIGURES

(upper : *Hinf* I-digests, lower : *Rsa* I-digests)

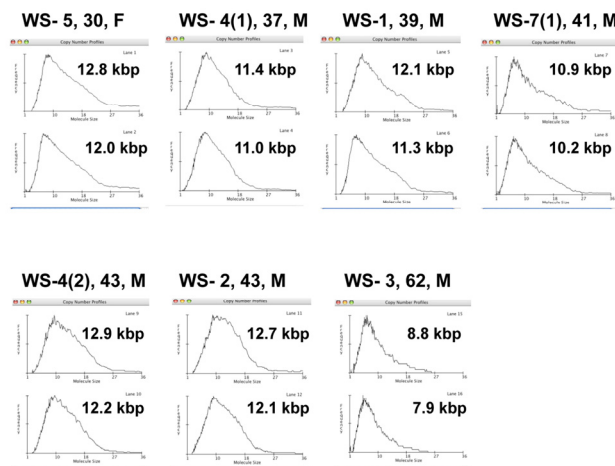


Figure S1. Representative TRF profiles obtained using the Telometric software package. Copy number profiles: plots of the relative copy number versus TRF length corresponding to the data in Figure 2B. Age (shown after case name): years old; F: woman; M: man; kbp: kilobase pairs.

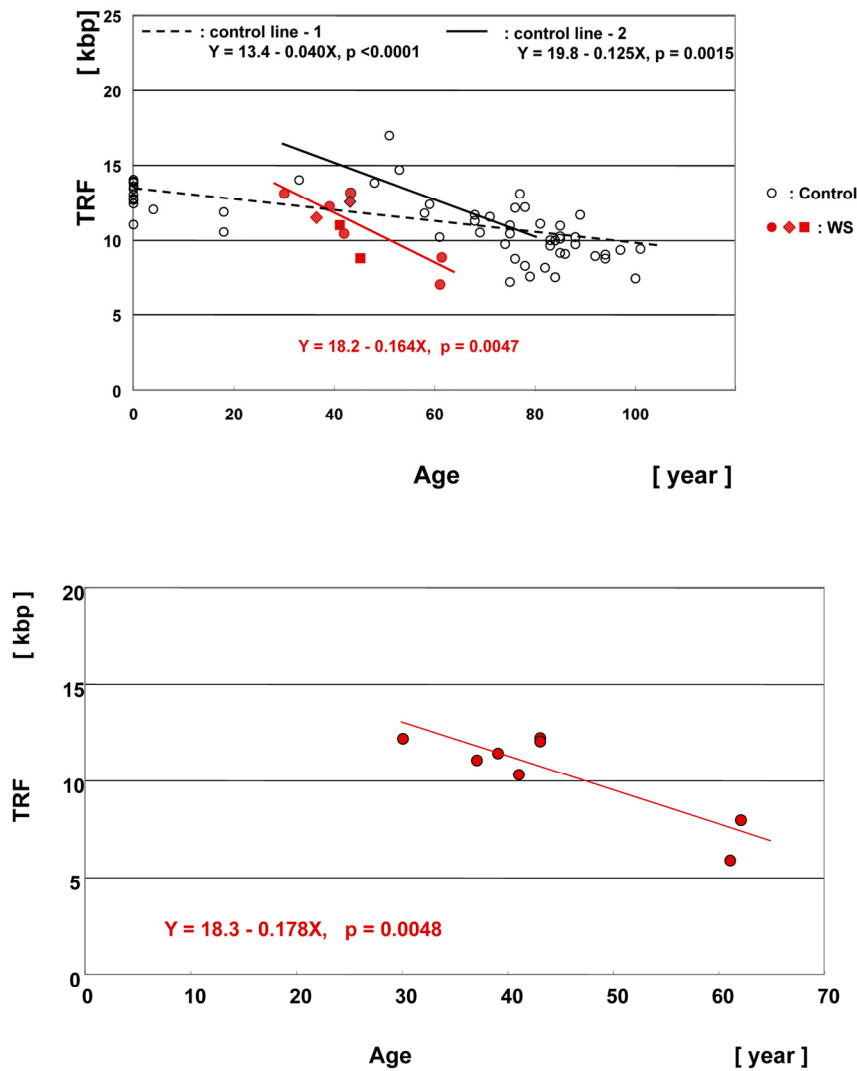


Figure S2 Scatter plot analysis of TRF length in skin samples from WS patients and controls. (A) Simple regression analyses yielded a regression line indicating that the average annual rate of TRF shortening in WS patients was 164 bp ($p = 0.0047$). The median value of the *Hinf*I-digested TRF lengths for skin in the 56 non-WS control subjects was also plotted as a function of age. The simple regression analysis yielded a regression line (control line-1) indicating that the average annual rate of TRF shortening was 40 bp ($p < 0.0001$). When we performed the analysis again using a non-WS control group, omitting neonates, infants, juveniles and the very elderly ($n = 21$, aged between 30 years and 80 years), we obtained a regression line (control line-2) indicating that the average annual rate of TRF shortening was 125 bp ($p = 0.0015$). From these scatter plot analyses, we found that the TRF lengths for younger WS patients (30s and 40s) were situated around control line-1, whereas those for the patients overall were located under control line-2. **(B)** By simple regression analysis, we obtained a regression line for the *Rsa*I-digested TRF length for 7 WS patients (8 samples) ($p = 0.0048$).

SUPPLEMENTARY TABLES

Table S1. Characteristics of the control patients and their skin TRF lengths

Patient ID	Age [years]	Sex ^a	TRF length ^b of skin ^c [kbp]	Cause of death ^d
1	0	M	13.9	
2	0	F	13.1	
3	0	M	11.1	13 trisomy
4	0	M	12.7	
5	0	F	12.5	
6	0	F	12.8	
7	0	F	12.7	
8	0	F	14.0	
9	0	F	13.5	
10	0	F	14.1	
11	0	M	13.9	
12	0	M	13.6	
13	4	F	12.1	
14	18	M	10.6	
15	18	M	11.9	Malignant melanoma of meninx
16	33	M	14.0	Colon cancer, Pancreatic cancer
17	48	M	13.8	
18	51	F	17.0	Cerebral infarction
19	53	F	14.7	Ovarian cancer
20	58	M	11.8	Lung cancer
21	59	M	12.4	Gastric cancer
22	61	M	10.2	
23	68	F	11.7	
24	68	M	11.3	Myocardial infarction
25	69	M	10.5	
26	71	M	11.6	Alcoholic liver cirrhosis
27	74	M	9.8	Sepsis
28	75	M	7.2	Gastric cancer
29	75	F	11.0	Liver cirrhosis
30	75	F	10.5	Myelodysplastic syndrome
31	76	F	12.2	Pneumonia
32	76	F	8.8	
33	77	F	13.1	Aspiration pneumonia
34	78	M	12.2	Acute myelogenous leukemia
35	78	F	8.3	
36	79	M	7.6	Acute myeloblastic leukemia
37	81	F	11.1	Malignant lymphoma
38	82	F	8.2	Acute myelogenous leukemia
39	83	F	10.0	Adult T cell leukemia
40	83	F	9.7	Motor neuron disease
41	84	M	10.0	Gastric cancer
42	84	F	7.6	Myocardial infarction
43	85	F	9.2	Brain hemorrhage
44	85	F	11.0	Gastric cancer
45	85	F	10.3	Cancer of gall bladder
46	85	M	10.1	Cancer of papilla Vateri
47	86	F	9.1	Colon cancer
48	88	F	10.2	Rupture of aneurysm
49	88	F	9.8	Cerebrovascular diseases
50	89	F	11.7	Rupture of aneurysm

51	92	F	9.0	Malignant lymphoma
52	94	F	8.8	Pneumonia
53	94	F	9.1	Aortic stenosis
54	97	F	9.4	Aspiration pneumonia
55	100	M	7.5	Chronic obstructive lung disease
56	101	F	9.4	Gastric cancer

- a. F: woman, M: man.
- b. Median value of TRF was used as representative.
- c. Samples of skin were obtained from abdominal wall near navel.
- d. Diagnosis at autopsy.

Table S2 Characteristics of the control patients and their muscle TRF lengths

Patient ID	Age [years]	Sex ^a	Median value ^b of muscle ^c TRF length [kbp]	Cause of death ^d
1	0	F	15.4	
2	0	M	11.2	13trisomy
3	0	M	16.0	
4	0	M	14.2	
5	0.3	F	16.1	
6	18	M	14.2	Malignant melanoma of meninx
7	33	M	13.5	Colon cancer, Pancreatic cancer
8	50	M	12.7	Interstitial pneumonia
9	51	F	17.7	Cerebral infarction
10	53	F	14.7	Ovarian cancer
11	58	M	11.8	Lung cancer
12	59	M	14.7	Gastric cancer
13	66	M	15.0	Brain hemorrhage
14	69	M	12.5	Subarachnoideal hemorrhage

- a. F: woman, M: man.
- b. Median value of TRF was used as representative.
- c. Samples of muscle tissue were obtained from skeletal muscle of thigh.
- d. Diagnosis at autopsy.