

Non-Pharmacological Approaches to Depression Care.....What About Exercise?

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Benefits of Antenatal Physical Activity:

The benefits of regular moderate-intensity physical activity during pregnancy are numerous and include:

- Improved fitness & prevention of low back pain
- Reduced excessive antenatal weight gain
- Improved well-being such as self-esteem, perceived level of energy level, positive body image, and decreased anxiety and depressive symptomatology.
- Possible decreased risk of preeclampsia and GDM

• Hegaard HK, Pedersen BK, Nielsen BB, Damm P. Leisure time physical activity during pregnancy and impact on gestational diabetes mellitus, pre-eclampsia, preterm delivery and birth weight: a review. *Acta Obstetrica Et Gynecologica* 2007;86:1290-6.
• Kramer MS, McDonald K. Aerobic exercise for women during pregnancy. *Cochrane Collaboration* 2010(6):1-55.
• Poudevigne MS ; O'Connor PJ A review of physical activity patterns in pregnancy women and their relationship to psychological health. 2006; 36, 1.; pp. 19-38.

Exercise and Depression

- Regular physical activity is associated with lower prevalence of major depression and anxiety disorders (cross-sectional studies)
- Physical activity total energy expenditure also shows a dose-response with current mental disorders
- Physical activity amounts equivalent to public health recommendations were efficacious in reducing symptoms of depression in young adults with mild to moderate MDD (RCTs)
- Some studies suggest physical activity is as effective in reducing depressive symptoms as pharmacologic treatments and Cognitive Behavioral Therapy.

Current Guidelines

❖ The Department of Health and Human Services (DHHS) states that adults should engage in a total of 150 minutes of moderate-intensity exercise each week. DHHS recently expanded the national guidelines on physical activity to include pregnant women and recommended that pregnant women free of obstetric complications engage in moderate-intensity physical activity on all or most days of the week¹.

❖ American Congress of Obstetricians and Gynecologists (ACOG) concurs that pregnant women free of obstetric complications engage in regular physical activity throughout their pregnancy². Moderate-intensity physical activity should be performed on most or all days of the week. ^{1,2}.

•Department of Health and Human Services: Physical Activity Guidelines for Americans 2008 (<http://www.health.gov/paguidelines/>) Accessed on July 19, 2011.

•American Congress of Obstetricians and Gynecologists Committee (ACOG). Opinion no. 267: exercise during pregnancy and the postpartum period. Obstet Gynecol 2002;99:171-3. (<http://mail.ny.acog.org/website/SMIPodcast/Exercise.pdf>) Accessed on July 19, 2011.

Absolute Contraindications to Aerobic Exercise During Pregnancy

- Hemodynamically significant heart disease
- Restrictive lung disease
- Incompetent cervix/cerclage
- Multiple gestation at risk for premature labor
- Persistent second- or third-trimester bleeding
- Placenta previa after 26 weeks of gestation
- Premature labor during the current pregnancy
- Ruptured membranes
- Preeclampsia/pregnancy-induced hypertension

Relative Contraindications to Aerobic Exercise During Pregnancy

- Severe anemia
- Unevaluated maternal cardiac arrhythmia
- Chronic bronchitis
- Poorly controlled type 1 diabetes
- Extreme morbid obesity
- Extreme underweight (BMI <12)
- History of extremely sedentary lifestyle
- Intrauterine growth restriction in current pregnancy
- Poorly controlled hypertension
- Orthopedic limitations
- Poorly controlled seizure disorder
- Poorly controlled hyperthyroidism
- Heavy smoker



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Specific Aims

- 1) Conduct qualitative studies to examine barriers and facilitators to physical activity engagement among pregnant women;
- 2) Identify effective recruitment strategies based on type and setting;
- 3) **Pilot test methodologies in pregnant women to provide necessary information to guide future implementation of a large-scale, RCT.**

Formative Studies

- Purpose: Compare and contrast multi-level barriers and facilitators related to antenatal physical activity to better understand what motivates and prevents pregnant women from engaging in RLPA; and to what extent these may differ among level of activity, parity, and SES.

- Methods: Informant interviews and focus groups were conducted with 56 pregnant women (aged 18-46 yrs, 14-40 weeks gestation).

Atlas/Ti software was used to code the verbatim interview transcripts by organizing codes into categories that reflect symbolic domains of meaning, and within domains, relational patterns, and finally overarching themes.

Variable	Full Sample N=56		Exercisers N=35		Non-Exercisers N=21		P-value
	N	%	n	%	n	%	
Race							
Caucasian	32	57.1	21	60.0	11	52.4	0.934
African American	15	26.7	9	25.7	5	23.8	
Other	10	17.9	6	17.1	4	19.0	
Hispanic/Latino							
Yes	12	21.4	5	14.3	7	33.3	0.091
No	44	78.6	30	85.7	14	66.7	
Marital Status							
Unmarried	18	32.1	11	31.4	7	33.3	0.555
Married	38	67.9	24	68.6	14	66.7	
Education							
< 12yrs	4	7.1	1	2.9	3	14.3	0.035†
12yrs	14	25.0	6	17.1	8	38.1	
> 12yrs	38	67.9	28	80.0	10	47.6	
Income							
Medicaid	25	44.6	15	42.9	10	47.6	0.729
Parity							
Nulliparous	27	48.2	22	62.9	5	23.8	0.005†

Formative Studies - Results

- Perceived barriers and motivating factors differed between groups at various intra- and interpersonal, and environmental levels.
- Differences based on level of physical activity, parity, and SES
- Findings suggest a need to tailor intervening efforts accordingly

Recruitment for RCT

- Healthcare settings
 - Active
 - HCP distributes study advertisement to patient
 - Interested patients sign HIPAA form
 - Study coordinator collects signed HIPAA forms
 - Passive
 - Post study advertisement in exam rooms
 - Interested patients contact the study coordinator directly
- Community settings
 - Passive
 - Post flyers in churches, community centers, baby/maternity stores, magazines, and on listservs

Inclusion Criteria	Exclusion Criteria
<ul style="list-style-type: none"> ● English speaking ● 18-46 yrs of age ● Reside in the Denver Metro area surrounding area ● Between 13-28 weeks gestation when intervention begins 	<p>Any women who....</p> <ul style="list-style-type: none"> ● Are experiencing a ‘high-risk’ pregnancy and advised by their physician not to exercise ● ‘High-risk’ conditions include absolute contraindications to aerobic exercise (ACOG): <ul style="list-style-type: none"> - haemodynamically significant heart disease - restrictive lung disease - incompetent cervix/cerclage - multiple gestation at risk for premature labor - persistent second or third trimester bleeding - placenta previa after 26 weeks gestation - premature labor during the current pregnancy - ruptured membranes - pregnancy induced hypertension ● score higher than 14 on the PHQ9 screening tool, currently receiving mental health counseling and/or medications for mood disorders ● report that they currently engage in more than 120 minutes of moderate physical activity per week ● current or diagnosed drug or alcohol abuse

Research Design

- Prospective, longitudinal RCT (2-arms: intervention/control)

Intervention Group

- 8 week program
- Theory-driven SEM, SCT, TTM
- Meet once a week – 1 1/2 hr sessions
- Target Behavior - 150 min of moderate physical activity
- Strategies targeting beliefs, attitudes, self-efficacy, perceived pros/cons
 - Beliefs - increase knowledge
 - Behavioral Skills - reinforce physical activity (e.g. logs, email tips, cell phone), practice physical activity skills (e.g. skill training embedded in intervention), promote outside physical activity (e.g. identify environmental facilitators, equipment, lifestyle changes)
 - Social Support - peer leaders (within group, identify other social support outlets)

Control Group

- Literature on healthy pregnancy behaviors

Change in Mediators of Physical Activity (Baseline – Post Intervention)

Variables		Intervention n =16		P value	Intervention (80% compliant) n =12		P value	Control n =17		P value
		Mean	SD		Mean	SD		Mean	SD	
Self Efficacy 1 to 5 (extremely confident)	baseline	3.43	0.54	0.64	3.47	0.60	0.92	3.44	1.09	0.166
	post	3.35	0.51		3.45	0.56		3.13	0.94	
Importance of PA 1 (yes) and 2 (no)	baseline	1.84	0.26	0.01	1.84	0.26	0.001	1.81	0.20	0.001
	post	1.69	0.14		1.67	0.16		1.59	0.23	
Social Support Exercise(Family) 1 (none) to 5 (very often)	baseline	26.13	8.25	0.05	26.17	8.94	0.017	23.35	8.54	0.980
	post	31.13	10.50		33.75	10.01		23.4	9.06	
Behavioral Skills 1 (never) to 4 (often)	baseline	2.45	0.68	0.08	2.34	0.63	0.036	2.38	0.42	0.415
	post	2.77	0.35		2.81	0.38		2.43	0.40	

Change in Physical Activity and Perceived Stress

Results

Group	PS Category	Δ Variables	Mean	SD	n
Intervention group (n=16)	<15	Δ in PPAQ	56.13	127.41	9
		Δ in PS	-.44	4.19	
	15 to 19	Δ in PPAQ	-13.22	76.44	6
		Δ in PS	-.33	9.91	
	>19	Δ in PPAQ	37.43	--	1
		Δ in PS	-5.00	--	
Intervention group (80% compliant) (n=12)	<15	Δ in PPAQ	54.48	146.67	7
		Δ in PS	.5714	3.10	
	15 to 19	Δ in PPAQ	1.64	49.44	4
		Δ in PS	-2.50	11.59	
	>19	Δ in PPAQ	37.42	--	1
		Δ in PS	-5.00	--	
Control group (n=17)	<15	Δ in PPAQ	-2.21	59.11	14
		Δ in PS	-.14	2.74	
	>19	Δ in PPAQ	-18.45	18.20	3
		Δ in PS	2.00	4.00	

Antenatal Physical Activity Counseling Among HCPs

Jenn Leiferman (PI)

Funded by AHRQ #1R03HS018595-01A1

Specific Aims:

- 1) Modify a pre-existing tool to assess healthcare providers' attitudes, beliefs, knowledge, barriers and practices related to antenatal physical activity;
- 2) Conduct a surveillance study, using the aforementioned tool, to assess healthcare providers' attitudes, beliefs, knowledge, perceived barriers and practices related to antenatal physical activity;
- 3) Explore potential variation in these relationships by type of healthcare provider (e.g. physician and midwife) and by specialty (i.e. obstetrics, and family medicine);
- 4) Conduct a Pre/Post analyses to test the effects of providing antenatal physical activity educational and community resources to healthcare providers on antenatal physical activity beliefs and practices.

Eligibility Criteria

- ❖ A HCP was eligible to participate in the study if he/she was a physician (i.e., practicing in obstetrics or family medicine) or a certified nurse midwife (CNM) who was currently practicing in the Denver-Aurora Metropolitan Statistical Area (DAMSA).
- ❖ Eligible HCPs who met the study inclusion criteria were identified through the local chapters of the American Academy of Family Medicine, Certified Nurse Midwives, and the American College of Obstetricians and Gynecologists.

FINAL BASELINE SAMPLE

- ❖ The final sample comprised 188 HCPs currently practicing in one of three specialties (i.e. family medicine, obstetrics, and midwifery) in the DAMSA.
- ❖ The final sample included 91 obstetricians, 40 midwives, and 57 family medicine physicians, resulting in an overall response rate of 32.7%.

	Full Sample (N=188)	OB/GYN (N=91)	FM (N= 57)	CNM (N= 40)
	n (%)	n (%)	n (%)	n (%)
Gender				
Male	55 (29.26%)	22 (24.18%)	32 (56.14%)	1 (2.50%)
Female	133 (70.74%)	69 (75.82%)	25 (43.86%)	39 (97.50%)
Race				
White	171 (91.94%)	81 (90.00%)	51 (91.07%)	39 (97.50%)
African American	4 (2.15%)	2 (2.22%)	2 (3.57%)	0 (0.00%)
Asian	8 (4.30%)	5 (5.56%)	2 (3.57%)	1 (2.50%)
American Indian	1 (0.54%)	1 (1.11%)	0 (0.00%)	0 (0.00%)
Other	2 (1.08%)	1 (1.11%)	1 (1.79%)	0 (0.00%)
Ethnicity				
Non-Hispanic, Spanish or Latino	179 (97.28%)	86 (97.73%)	53 (94.64%)	40 (100%)
Hispanic, Spanish or Latino	5 (2.72%)	2 (2.27%)	3 (5.36%)	0 (0.00%)
Years providing healthcare services				
Less than 5 years	9 (4.79%)	1 (1.10%)	4 (7.02%)	4 (10.00%)
6-9 years	33 (17.55%)	18 (19.78%)	11 (19.30%)	4 (10.00%)
10-14 years	47 (25.00%)	23 (25.27%)	16 (28.07%)	8 (20.00%)
15-24 years	52 (27.66%)	27 (29.67%)	13 (22.81%)	12 (30.00%)
25+ years	47 (25.00%)	22 (24.18%)	13 (22.81%)	12 (30.00%)
Practice Setting				
Urban	103 (54.79%)	38 (41.76%)	34 (59.65%)	31 (77.50%)
Suburban	86 (43.62%)	50 (54.95%)	23 (40.35%)	9 (22.50%)
Rural	3 (1.60%)	3 (3.30%)	0 (0.00%)	0 (0.00%)
Years at present location				
Less than 2 years	16 (8.51%)	5 (5.49%)	7 (12.28%)	4 (10.00%)
2-4 years	52 (27.66%)	23 (25.27%)	15 (26.32%)	14 (35.00%)
5-9 years	52 (27.66%)	26 (28.57%)	12 (21.05%)	14 (35.00%)
10-14 years	32 (17.02%)	14 (15.38%)	14 (24.56%)	4 (10.00%)
15+ years	36 (19.15%)	23 (25.27%)	9 (15.79%)	4 (10.00%)

Baseline Survey

- ❖ 39-item close-ended survey
- ❖ Survey Assessed:
 - Beliefs and attitudes
 - Knowledge
 - Self-efficacy
 - Perceived barriers
 - Current practices
 - Previous training

HCP Knowledge

- ❖ About 90% (n=169) accurately described the types of exercises that are generally considered safe for pregnant women free of obstetric complications.
- ❖ Nearly 30% (n=54) of respondents did not correctly identify the warning signs to terminate exercise while pregnant
- ❖ 85% (n=159) were able to correctly identify ACOG's absolute contraindications to antenatal physical activity
- ❖ Over half the sample (55%, n=102) incorrectly believed that a pregnant woman's heart rate should not exceed 140 beats/minute during exercise
- ❖ Just under half (48%, n=89) were not familiar with the current DHHS's recommendation that women free of obstetric complications should engage in at least 150 minutes of exercise per week

Training/Continuing Education

- ❖ 17% (n=31) of providers reported that they never received professional training in antenatal physical activity counseling.
- ❖ Of those that reported receiving training, only 31% (n=48) reported that the training was 'good' or 'excellent'
- ❖ Majority, 69% (n=107) claimed their training was 'fair' or 'poor'.

Preliminary Pre- Post Test Key Findings

Knowledge

- ❖ Pregnant women should not decrease their exercise as their pregnancy progresses
- ❖ Recommended daily target of antenatal exercise
- ❖ Which exercises are safe for pregnant women free of obstetric complications
- ❖ A pregnant woman's heart rate can exceed 140 beats/min
- ❖ Familiarity with community resources for antenatal physical activity

Practices

- ❖ Providing Antenatal Physical Activity Counseling to sedentary patients
- ❖ Someone in office providing Antenatal Physical Activity Counseling

KEY POINTS

- Healthcare providers (HCPs) play an integral role in promoting healthy lifestyle behaviors, such as physical activity, during pregnancy.
- Majority of HCPs across all three specialties believe engagement in antenatal physical activity will result in improved health for mother and baby.
- One-third of HCPs fail to discuss physical activity with their patients and over 60% of HCPs fail to advise their sedentary pregnant patients to begin to exercise regularly.
- Over half of HCPs believe that the patient will not follow the physical activity advice given.

IMPLICATIONS

➤ There is a clear need for continuing education opportunities on:

The current antenatal physical activity guidelines

- Exercise prescription (e.g. frequency, duration, mode and intensity)
- Contraindications to exercise and safety recommendations

Ways to Enhance Patient-Provider Communication

- How to talk about physical activity with sedentary patients
- How to talk about physical activity with overweight/obese patients
- How to talk about physical activity with resistant or noncompliant patients

➤ There is a need to educate HCPs on available local community resources related to antenatal physical activity

Promoting Prenatal Behavioral Change Counseling Among HCPs

Primary Goals of Project

- The Overall Project Goal is to develop replicable academic modules that aim to improve patient-provider communication by enhancing interpersonal and decision making skills and the information exchanged in delivering patient-centered prenatal care pertaining to antenatal health behavior change (i.e. physical activity, healthy eating, healthy weight gain, stress management and smoking cessation).

Results – Physical Activity

- ▶ **Facilitating factors for effective patient-provider communication include:**
 - Experiencing discomfort or being concerned about safety encourages patient to initiate discussion of PA
 - Emphasizing safety of baby encourages patient to discuss PA

- ▶ **Barriers that discourage communication:**
 - Inconsistent advice and guidance from multiple sources
 - Inconsistent information received from multiple HCPs in group setting; patient receiving varying information
 - Being unsure of safe activities results in patient “feeling limited”

Participant Quotes

- *“...more specific examples of what’s safe and what’s not because some of the guidelines are pretty general, like ‘if it doesn’t feel right then stop.’ But then they say you’re always going to have, you know, aches and pains the whole time. So sometimes you’re like ‘well nothing feels right’ and you want to just stop all together.”*
- *“It would be nice to have more structure like, you know, black and white, like more concrete rather than ‘do what your body feels comfortable with’.”*

Recommendations – Physical Activity

Recommendations for improved communication:

- ▶ Patients receive handouts or a packet with basic physical activity information, but desire:
 - Goal setting information and follow-up advice
 - Referral to existing credible and reputable resource(s) for more information
 - Continuous guidance on the safety of their activities
 - Distribution of important information via handbooks and pamphlets
 - Receiving credible, common, and consistent information from all HCPs
 - Tailoring of advice based on patient's history and current PA level
 - Receiving evidence-based guidelines instead of being told to “just listen to your body”

Results – Stress Management

▶ Facilitating factors:

- Developing rapport with HCP
- Referral or information about community resources
- Emphasizing how stress affects baby

▶ Barriers:

- Social stigma associated with stress
- Perceiving stress as normal
- Feeling discouraged with limited treatment options (i.e. pharmacologic)
- Closed-ended question for depression screening; no further discussion initiated

Participant Quotes

- *“...like with me, stress is just kind of common so I don't think I really recognize it all the time ...and it never occurs to me that maybe I should be bringing this up.”*
- *“I just think having a good relationship with the health care provider and feeling comfortable enough to bring it up...if they set the tone to say... 'you know, anything, please bring it up' like 'I'm here for to help you, and I want to know, and I want to make sure you feel comfortable talking to me about anything...”*

Recommendations – Stress Management

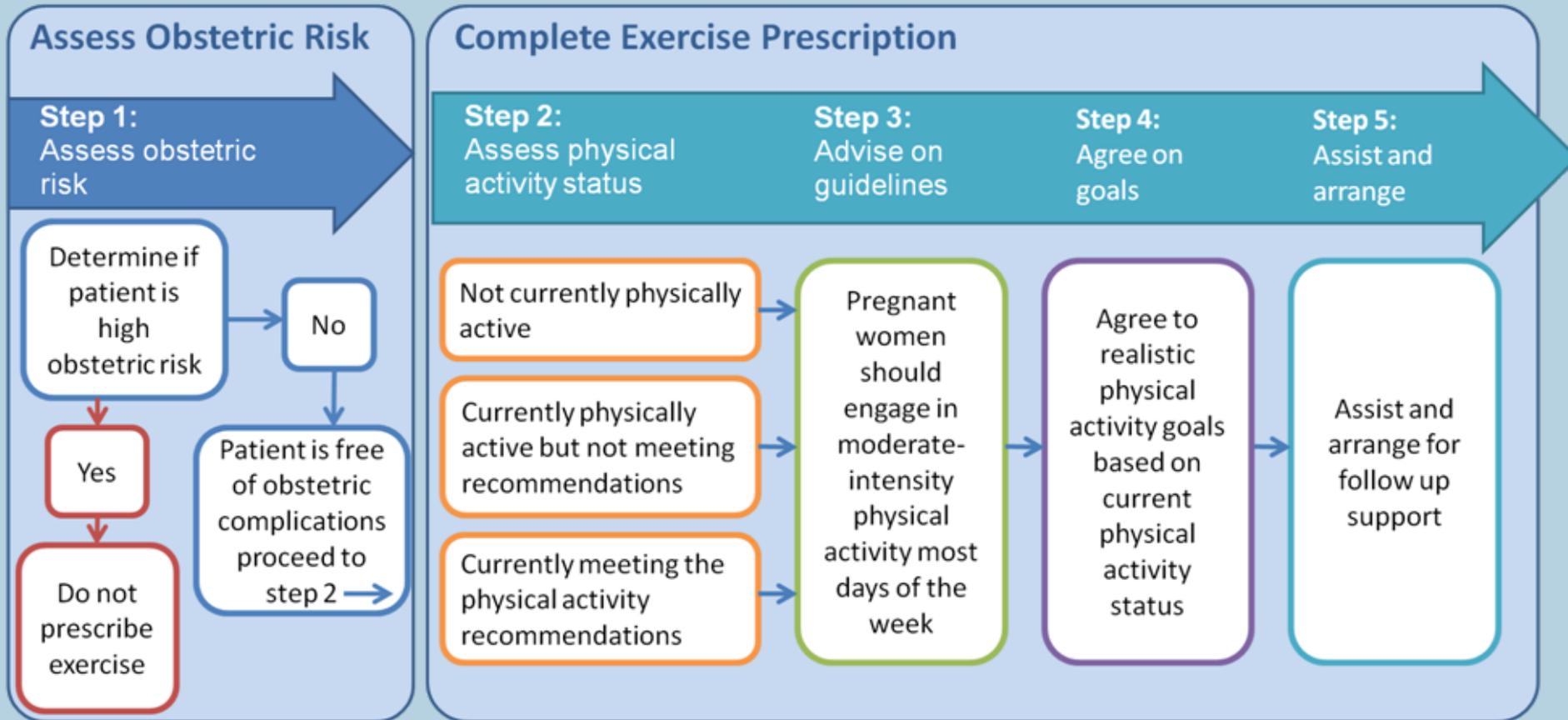
- ▶ Although many patients are asked if they are feeling depressed, they desire:
 - More information about community resources and support groups
 - That HCPs express interest, understanding, and compassion to develop rapport
 - More information on stress management resources

Next Steps

- ▶ Currently pilot-testing the effect of modules on patient-provider communication by surveying (pre-post) both HCPs and patients.
- ▶ AHRQ grant to expand 5As model

Exercise Prescription 5 Step Model*

EXAMPLE OF CME MODEL



Adapted from Glasgow et al. (2006). Assessing delivery of the five 'As' for patient-centered counseling. *Health Promot. Int.* (2006) 21 (3): 245-255.

My Baby, My Move: Contact Information

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